



LSE

Efficiency Review of Austria's Social Insurance and Healthcare System

Volume 1 – International Comparisons and Policy Options

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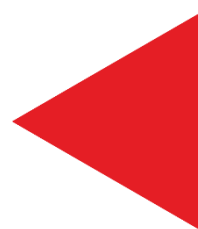


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Institution	Name and role	Contribution
Austrian Ministry of Health and Women's Affairs	Various	Provided relevant information throughout the review.
University of Vienna	Anna Theresa-Renner, Assistant Professor	Collection and analysis of data examining utilisation of inpatient healthcare services in Austria, including regional variations.

Institution	Name and role	Contribution
London School of Economics and Political Science (LSE Health)	Martin Wenzl, Research Officer	National and international analysis of case management approaches and best practice principles.
London School of Economics and Political Science (LSE Health)	Ilias Kyriopoulos, Research Associate	Statistical analysis of healthcare databases
London School of Economics and Political Science (LSE Health)	Dr Irene Papanicolas, Assistant Professor	Assistance with international best practice in measuring healthcare quality
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National Institute of Health and Disability Insurance (Belgium)	Mr Thomas Rousseau	Provision of information related to the Belgium health insurance system.
Bocconi University	Professor Giovanni Fattore, Chairman of the Department of Policy Analysis and Public Management	Information regarding Italy's taxation system
Imperial College London	Martina Orlović, Research Associate	Research assistance

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Executive Summary

Review brief

In 2016, the London School of Economics and Political Science (LSE Health) was engaged by the Austrian Ministry of Labour, Social Affairs and Consumer Protection to undertake an efficiency review of the country's social insurance system. The review was specifically targeted at health competencies within the social insurance system; for this reason, other forms of care covered by Federal and Länder governments, were only examined where directly applicable.

The review can be broken into four interconnected components, each led by a separate organisation. Further details on each of these components and their aligning report are provided in the table below.

Volume number and report	Objective	Lead organisation
1 – International Comparisons and Policy Options	Compare the Austrian system to international experiences, and using this information, define a range of policy options to improve efficiency within the system.	London School of Economics and Political Science (LSE Health), including a team of international experts, and the Institute for Advanced Studies (Health Economics), Vienna
2 – Legal Analysis	Analysis of relevant legal considerations within the social insurance system.	University of Salzburg
3 – Stakeholder Submissions	Compilation of formal submissions provided by key stakeholders within the Austrian social insurance system.	Compiled by LSE Health
4 – Situational Analysis	Map out current healthcare arrangements within the Austrian social health insurance system.	Contrast Ernst&Young Management Consulting GmbH

This report represents *Volume 1 - International Comparisons and Policy Options*. The report drew upon information collected in volumes 2 to 4, as well as further analysis of reports completed by Austrian organisations and experts, and international experiences. Using this information, a range of policy options designed to improve efficiency within the Austrian social insurance system were developed.

Overview

Our analysis of the Austrian social health insurance system revealed that the system is both complex, as a result of its multi-level governance structure, and fragmented, given the dual nature of financing. Specifically, outpatient care is financed by social health insurance, whereas inpatient care falls under the joint responsibility of federal and Länder governments, with SHI paying a fixed share of contributions. Such an arrangement fosters various inefficiencies including cost-shifting, and discourages continuity of care, which leads to higher overall costs.

This finding is not new, and has been highlighted by various research institutions, as well as policy-makers, as a key barrier to improving healthcare system efficiency. As a result, in recent years, many efforts have been made to improve coordination and align incentives.

Ultimately, the problem of dual financing can only be overcome with major constitutional reform to create joint budgets. However, we recognise the extreme legal difficulty implementation of joint budgets presents given a two-thirds majority within Parliament is required. In response, the policy options within this report present pragmatic approaches to enhance coordination and improve efficiency within the current system.

Another key issue that has been raised, is that concerning the number of social health insurance carriers. Multiple purchasers of healthcare is not uncommon, for this reason, the total number of carriers, in our opinion, is not viewed as the most important barrier to achieving efficiency. Rather, it is how Austria differs in terms of the types of services procured by purchasers, and secondly, by the allocation of funds to purchasers which represent key challenges. In regard to the former challenge, Austria is unique in that healthcare purchasers operate in silos (i.e. insurance carriers versus Länder), that is, purchasing care for a portion, as opposed to all healthcare services. Concerning the latter challenge, only a small proportion of health insurance carrier funds are risk-adjusted, which results in inequities. This is also the case with other resource allocation mechanisms in Austria (i.e. federal government to the Länder or from social health insurance to the Länder), which are mostly based on political negotiations and historical allocation patterns.

Limited risk-adjustment has meant that, despite mostly uniform contribution rates, differences in benefits for specific services may occur. Such an arrangement is inequitable and goes against international trends. However, it is worth highlighting that self-reported unmet medical need in Austria is one of the lowest in Europe.

Ensuring high-quality care has also been a key agenda for policy-makers in recent years. Despite this, the types of quality indicators measured, in addition to the uses of information collected in Austria, could be enhanced. More robust information on quality within the system will ultimately improve patient outcomes via the development of evidence-based policies.

Finally, it is evident that Austrian policy-makers have recognised primary care and public health as a key area for enhancement, for example, with the development of the diabetes disease management program. Nevertheless, discussions with stakeholders, in addition to findings within the policy and academic literature, reveal that relative to other advanced European countries, Austria's primary care and public health sectors could be significantly improved. This is evidenced by, for example, low rates of vaccinations and lower than average life-expectancy projections, as well as high inpatient admissions rates. Such findings reiterate the need for further investment in primary care and public health, while being cognisant that, in the short-term, cost-savings are unlikely, given the presence of fixed hospitals costs.

Summary of policy options

Based on the findings outlined above, a range of policy options to improve efficiency within Austria's social health insurance system have been proposed. Policy options have not been ranked given, ultimately, it is the responsibility of Austrian policy makers and stakeholders to make decisions regarding the direction of the healthcare system.

In reviewing these policies, we offer policy-makers and stakeholders the following recommendations: first, to view policy options outlined in this report, as well those by various Austrian research institutions and organisations (including stakeholder submissions – Volume 3 of this review); second, to ensure future discussions and implementation of policy options be done in a transparent and inclusive manner so that key stakeholders do not view change as a 'zero-sum game'; and third, to keep in mind that no healthcare system is perfect, and that any future efforts should build upon current successes, which in the case of Austria, include high-levels of population satisfaction as a result of ease of access to healthcare services, and low levels of unmet need.

It is important to highlight that the remit of this review was limited, given it was restricted to the social insurance system. However, as previously outlined, given the complex nature of the healthcare system, where directly applicable, consideration was given to healthcare under the jurisdiction of federal and Länder governments.

Policy options: Structure of the social insurance system

Four alternative models have been proposed to improve efficiency and equity within the system. Models 1-3 involve structural change to the social insurance system through an amalgamation of carriers. Amalgamation, in the short-run, can lead to cost increases given expenses associated with structural change and implementation. However, in the medium- to long-term, if implemented correctly, these models could lead to efficiency gains, for example, through economies of scale and scope, and enhanced knowledge transfers. It is important to note that sub-options for models 1-3 have also been developed, however, they have not been included in this summary. Model 4 would increase efficiency and equity by extending risk-adjustment and enhancing coordination within the current structural model.

- **Model 1 (partial amalgamation):** one national accident insurance carrier, one national pension insurance carrier, one employed health insurance carrier (GKKs, BVA, VAEB, BKKs and KFAs) and one self-employed health insurance carrier (i.e. SVA and SVB).
- **Model 2 (limited amalgamation):** one national pension insurance carrier, one self-employed health insurance carrier, one employed health insurance carrier (excluding civil servants, i.e. BVA, VAEB and KFAs), one accident insurance carrier (excluding civil servants), and one joint accident and health insurance carrier for civil servants.
- **Model 3 (health and accident amalgamation):** one national pension insurance carrier, one health and accident insurance carrier divided by each of the nine states.
- **Model 4 (insurance coordination):** model 4 aims to improve the current social insurance system by enhancing risk-adjustment between health insurance carriers, as well as improving coordination between carriers through Joint Specialists Centres. Joint Specialist Centre ‘themes’ would be defined by a joint Working Group (including HVSV, and both the Ministry of Health and Women’s Affairs, and the Ministry of Labour, Social Affairs and Consumer Protection), however, it will be the responsibility of carriers who takes on each theme. Although not compulsory, carriers will be incentivised to actively participate in the scheme to minimise duplication.

Policy options: Risk-adjustment

Given model 4, as outlined above, is introduced, the following five risk-adjustment options have been proposed to improve equity and efficiency within the system. RA1 and RA2 are considered the most comprehensive and thus mutually exclusive, RA3-5, however, could be implemented in unison.

- **RA1:** All funds received by social health insurance carriers to be risk-adjusted through a central agency (i.e. HVSV). Alternatively, a step-wise approach could also be considered, whereby the proportion of funds risk-adjusted are increased over time until it is felt there is an equitable distribution of funds.
- **RA2:** This option would involve a simultaneous reduction to contribution rates and the implementation of an earmarked levy dedicated to risk-adjustment across social health insurance carriers.
- **RA3:** RA3 would amalgamate existing risk-equalisation schemes into one pool of funds to be used for risk-adjustment purposes. Using the most recent data, risk-equalisation schemes amount to €3 billion annually (including the Hebesätze, or €1.4 billion, excluding the Hebesätze).
- **RA4:** Under this option, social health insurance carriers would subsume responsibility for hospital outpatient departments using an appropriate level of funds from State Health Funds. A central agency (i.e. HVSV) would be responsible for redistributing funds to carriers based on a range of risk-adjustment factors. Funds could be used, for example, to enhance primary care and hospital outpatient departments.
- **RA5:** Finally, RA5 would pool a proportion of contributions into a central fund (managed by the HVSV), which would then be used to reimburse GPs on a capitated risk-adjusted basis. Given the significant cultural change associated with this policy (i.e. by registering with one GP), this policy is should only be considered in the long-term.

Policy options: Collection of contributions

The following policy options relating to the collection of contributions are provided below:

Collection of contributions

- **Base SVB contributions on actual income:** a shift in taxation base towards actual income promotes an alignment between BSVG and ASVG funds in regards to the collection mechanism of contributions, and improves equity in the financing system.

- **Introduction of a proportional fiscal system with maximum contributions in the SVB:** a shift from the regressive to a more proportional fiscal system in conjunction with the introduction of a maximum contribution amount could promote a more equitable collection of contributions, which can be rendered fiscally neutral.
- **Aligning the BVA contribution base with that of regional carriers:** lower BVA's employee contributions, whilst raising employer contributions to harmonise the collection of contributions across funds, which could be rendered fiscally neutral. Gradually lower user charges for BVA insured to the regional fund level (GKK) to foster equity in the collection of contributions across funds.

Multiple insured persons in Austria

- **Single collection of contributions without a choice of carrier:** introduce a single location for the collection of contributions, in addition to keeping maximum contribution bases in place. This can either be in the form of an independent entity or by nominating regional funds to collect contributions on behalf of all funds, in order to simplify the administration process. As such, the refund for excess contributions could be automatically calculated through an official channel, without the need for manual applications. An absolute hierarchy, or a hierarchy based on the main income source of an individual could be introduced to determine the carrier membership of an individual. Further studies on the financial impact on carriers need to be conducted prior to application of this option.
- **Single collection of contributions with a choice of carrier:** *similar to the option presented above,* with the main difference that insured persons could choose their carrier of preference, based on their professions. While this option does not entirely eliminate inequity in the system, it may reduce the former, as insured could only switch carriers on an, for example, yearly basis, rather than intermittently charging different carriers.
- **Multiple collections of contributions without a choice of carrier:** insured individuals continue to pay to multiple carriers, however, the insured would be automatically assigned to a default carrier. This constitutes the carrier for which the insured pays the largest share of contributions and the insured is only entitled to benefits of the default carrier. All carriers receiving contributions for the insured would re-direct these contributions to the respective default carrier. In addition, the refund process for excess contributions could be automated, in order to reduce the administrative burden of manual applications and to eliminate inconveniences to the insured.

- **Multiple collections of contributions with a choice of carrier:** similar rationale to the option presented above, with the main difference that individuals have the option to choose a default fund to access services from, while the second carrier will conduct transfers of funds to the former. However, this would only lead to partial improvements in equity.
- **Retrospective payments between carriers:** one of the carriers conducts retrospective payments to the second insurance carrier, which was predominantly used by the insured person to access services. This system constitutes a modification of the current mechanism in that it adds a compensatory mechanism to ensure the financial stability of funds. However, it must be noted that this option may be more difficult to implement and does not render the system more equitable.

Policy options: Defining and harmonising benefits

The following the policy options to define benefits within the healthcare system are proposed.

- **Outpatient drugs:** disclosure of outpatient drug assessments would render the current process more transparent.
- **Inpatient drugs:** enhance and strengthen coordination and procurement policies across regions and introduction of a transparent decision-making process for inpatient pharmaceuticals.
- **Establishment of an independent, arm's length HTA body:** transition into an independent, arm's length HTA body that undertakes HTA for different types of technology and provides advice to relevant decision-makers in order to increase transparency.
- **Promote a full HTA for a subset of technologies,** particularly those that have important resource implications (high cost/high volume). Formal evaluations should be introduced across costly technologies and a threshold for this purpose should be established.
- **Establish clear parameters regarding the conduct of HTA,** such as type of evidence requirements and the types of evidence that can be admitted into assessment and appraisal.
- **Provide guidance on** methods of assessment and criteria (beyond costs and effects); the role of stakeholder involvement; the appeals process and associated timelines; timelines for assessment and re-assessment for rapid reviews, full HTAs and multiple HTAs; and, the monitoring and implementation of decisions.
- **Provide information on** the structure and composition of the relevant committee (technology Appraisal Committee – TAC), which needs to reflect the stakeholder complexity in the context of

each technology type and the national-regional-local trade-offs that exist in different circumstances.

The following policy options to harmonise benefits within the healthcare system are proposed.

- **Estimated cost of harmonising a specific set of benefits:** initial costs of a harmonisation for specific goods and services (i.e. medical aids and therapeutic devices; dentures; health care services including psychotherapy, physiotherapy and logopedics) were estimated by increasing the per capita expenditure levels of those funds that are (1) below the average per capita expenditures across all funds and (2) below 70% of the highest per capita expenditure across all funds. **Total additional costs per year of harmonising specific benefits across all funds:**
 - (1) €171.075.130 (Risk-adjustment (age and gender) for medical aids and therapeutic devices: €176.988.291). Percentage change in expenditure of SHI for these benefits: ↑19.4% (↑20.1).
 - (2) €390.177.440 (Risk-adjustment (age and gender) for medical aids and therapeutic devices: €394.090.543). ↑42.8% (↑43.6).
- While this study provides initial cost calculations, the harmonisation of benefits is a political decision to be taken by the government and stakeholders. Even though a harmonisation of benefits is central to ensuring equity, it is noteworthy that Austria has one of the lowest levels of unmet need in Europe.
- **Data collection:** a unified collection of high-quality data that is comparable across funds is of central importance to supporting the harmonisation of benefits. Further efforts are required to ensure uniform data storage and structure.
- **Financing options** in the case of a political decision to harmonise benefits:
 - (1) Partial funding could ensue through a risk-adjustment scheme, or enhanced risk-adjustment scheme
 - (2) Alternatively, or in addition, government funds could be directed to insurance carriers that offer a slightly less comprehensive benefits package compared to other funds.
 - (3) Further funds could be directed to the project by improving efficiency in the system. For instance, a reduction in hospitalisations could lead to significant savings. However, significant investments in outpatient and primary care are required in the first instance to maintain high-quality care, whilst simultaneously reducing hospital admissions, meaning that savings to be used for a harmonisation could be generated in the mid- to long-term.

- (4) In addition, better coordination and consolidation could also lead to efficiency gains, which could be directed in the form of savings to increase coverage of benefits in Austria.

Policy options: User charges

The following policy options to enhance efficiency and equity via user charges have been proposed. Please note, none of the policy options recommend an increase in user charges, rather a change in their composition to maximise efficiency within the system.

- **Pharmaceutical cap:** under this option, the universal 2% net income pharmaceutical cap would be replaced by a three-tiered cap, with insurees being allocated to caps according to their total income. Those in the lowest income band would be subject to a lower cap (i.e. 1.5%), middle income earners would see no change in their cap (i.e. remain at 2%), while high-income earners would see their cap increase to 2.5%. Depending on the success of the cap, consideration could be given to expanding the cap to all inpatient and outpatient healthcare services.
- **Value-based user charges:** once a robust HTA system is in place, it is advised that rates of user charges be linked to HTA findings, with insurees paying less (or nothing) the more effective a product/service is. Ideally user charges would take into account individual circumstances, however, this is associated with high-levels of administrative burden. Therefore, it is recommended that value-based user charges be linked to the effectiveness of products/medical devices/services (i.e. inverse relationship between effectiveness and co-insurance/payment rate). In the interim, policy-makers could encourage 'softer' value-based user charges, following the lead of the SVA and VAEB.
- **Convergence of user charges to the lowest level:** finally, it is recommended that current trends continue by encouraging convergence of user charges across health insurance carriers to improve equity within the system.

Policy options: Investment in healthcare services

Three policy options to enhance investments in healthcare services are proposed. These relate to accounting practices, reserves, and whether carriers should make or buy healthcare services.

- **Accounting:** to improve clarity, it is recommended that carriers only term liquid assets as 'reserves', that is, monies which can be used for investment purposes.
- **Enhance use of reserves:** to improve access to healthcare services for all, it is advised that the use of reserves be enhanced, for example by: a) pooling all or a part of a carrier's contributions into

one fund for investment purposes (e.g. to enhance primary healthcare), b) encourage joint investment across carriers (without pooling reserves), or c) encouraging carriers to open up their facilities to all individuals, not just their insured population.

- **Make or buy:** before investing in healthcare services, carriers should be encouraged to undertake a comprehensive analysis before investing, to determine whether it is most appropriate to make or buy (or concurrently source). However, to improve capacity within each health insurance carrier, it is encouraged that carriers invest, at least partly, in their own healthcare services.

Policy options: Broadening the social welfare base

Austria is a strong economic performer, with a relatively high level of employment and GDP per capita. Economic growth is expected to grow over the next few years, however, consideration should be given to current and future challenges facing the economy including an ageing population, and a rise in self-employment, digitalisation and automation. Based on these challenges, the following policy options have been developed to ensure sustainability of the social insurance system.

- **Education and skills:** Align education with future skills required within the workforce, and encourage lifelong learning.
- **Retirement policies:** encourage further efforts to increase the actual retirement age (i.e. encourage people to stay in the workforce for longer).
- **Workforce participation:** continue efforts to increase the proportion of women working within the formal economy.
- **Taxation policies:** after 'softer' policy options, as those outlined above, have been introduced, consider changes to the tax system if further funds are required. Specifically, by using total income as opposed to earned income as the basis for contributions, raising company contributions, and/or introducing additional earmarked health taxes.

Policy options: Contractual agreements

To improve efficiency within the healthcare system via a change to contractual agreements, the following policy options are recommended. These policy options have been broken down according to broad timelines, which reflect their relative importance.

Short-term:

- **Arbitration:** to ensure a level playing field during contractual negotiations, the following option is proposed; allow the Federal Arbitration Committee to postpone the termination of contracts from three to six months, after six months an external arbiter would be introduced to facilitate negotiations. Given no agreement is reached, the Ministry of Health and Women’s Affairs would set the contractual agreement based on feedback from the external arbiter.
- **Selective contracts:** If certain items cannot be agreed upon in the general contract, allow social health insurance carriers to selectively contract (e.g. to fill physician vacancies).
- **Structural plans:** if current regional structural plans fail to achieve their desired objective, it is advised that an independent committee be developed to provide recommendations on the number and locations of physicians. Recommendations would form the basis of contractual negotiations, with a requirement to justify any deviations to the Ministry of Health and Women’s Affairs.
- **Harmonisation among specialists:** Harmonise naming of services/items across outpatient specialists to improve transparency.
- **Primary and outpatient care:** given the high number of hospital admissions, it is clear that primary care within the healthcare system requires improvement. Multiple policies could be introduced to achieve this, for example, by encouraging group practices, primary healthcare units, and extending hospital outpatient departments and disease management programs. It is important to note that efficiency gains from enhancing primary care are only realisable in the medium- to long-term given fixed supply-side costs within the inpatient sector (e.g. buildings, labour).

Medium-term:

- **Bundled payments:** to enhance coordination and continuity of care, social health insurance and Länder could implement joint budgets for chronically ill patients who frequently access healthcare services. Such an approach would avoid patients ‘wandering’ the system and ensure that appropriate care is provided.
- **Rural and remote GP remuneration:** to increase the number of physicians working in rural and remote areas, it is recommended that GPs in these areas be paid on a risk-adjusted capitated budgets, which takes into account the unique circumstances of working in these areas. To further incentivise physicians, flat rate payments could be introduced to complement capitated budgets, such payments should be linked to actions/services that promote overall improvement in healthcare quality (e.g. smoking cessation programs).

Long-term:

- **GP remuneration:** if the capitated system amongst rural and remote GPs is successful, consideration could be given to extending the scheme to urban GPs, who would also receive additional flat rate payments.
- **Role of GPs:** it is recommended that the role of GPs in the healthcare system be enhanced to relieve the burden placed on inpatient care, specifically, by encouraging individuals to register with a single GP who would take responsibility for the individual's overall healthcare plan. Such a system would be voluntary, and only realisable once appropriate structures and processes have been put in place (e.g. more advanced GP training, greater number of GPs).

Policy options: Healthcare quality

Policy options to improve healthcare quality within the system have been grouped into three categories. First, changes to the role ÖQMed, second, changes to data availability and quality indicators, and third, changes to hospital admissions, readmissions and discharge management.

In regard to the role of ÖQMed:

- Retain ÖQMed and create an additional independent quality committee responsible for monitoring the quality of care among contracted and non-contracted physicians.
- Relocate ÖQMed to the Ministry of Health and Women's Affairs, and give the organisation control over monitoring the quality of care among contracted and non-contracted physicians.
- Maximise the value of data collected through quality indicators through, for example, providing physician feedback and sharing best practice principles.

In regard to data availability and quality indicators:

- Develop a coding system for outpatient diagnosis, this would allow outcome indicators to be implemented.
- Increase focus on outcome indicators, and where possible link them to aligning process indicators.
- Link quality indicators across all levels of care to develop patient pathways.
- Allocate responsibility for developing and implementing indicators to the relevant professional group within the Ständiger Koordinierungsausschuss. However, any new indicators should be developed in consultation with the medical community.

In regard to **hospital admissions, readmissions and discharge management:**

- Research is needed to investigate the causes, as well as clinical and policy implications, of high rates of hospital discharge and readmission in Austria (outside remit of this review).
- In order to outbalance political benefits and costs, federal government funds to Länder should be based on objective criteria that reflect the needs of the population.
- Apply additional pressure from the financial targets within the *Zielsteuerung Gesundheit* and the stability pact (i.e. using real values instead of nominal values).
- Austrian Structural Health Plan to base its forecasts on epidemiological data and best practice of service provision, rather than using current demand as a proxy for need
- Further integrate secondary care units in the outpatient sector with primary and hospital care
- In regard to payment of care, for hospitals, the LKF system could be linked to quality of care, while in the first instance, a DRG system within the outpatient sector is advised, given this would improve information on patient pathways. Finally, and as previously mentioned under ‘medium term’ contractual agreements, bundled payments using funds from a joint budget (between Länder and social insurance) could be introduced, with pilots first being run for multi-morbid, high cost patients.

Policy options: Demand and supply of physicians

Policy options to increase the availability of physicians include:

- **Improving work-life balance** for both male and female physicians, especially in regard to child and elderly care (with a specific focus on those working in rural and remote areas).
- **Reducing incentives for physicians to emigrate**, for example, by providing clarity over future work conditions, ensuring working conditions are compatible with those abroad in regard to hours worked and reimbursement.
- **Reducing the ‘brain drain’** occurring during the transition phase between medical school and professional training, for example, by improving training programs and ensuring these programs are allocated sufficient time.
- **Checking if working time directive compliance necessitates prolongation of training periods**, especially for specialists who need also dexterity, not only knowledge.

Policy options to increase the productivity of physicians include:

- **Improving the reputation of physicians working in primary care**, for example, via additional GP training requirements to fulfill their responsibilities within newly established primary healthcare units.
- **Delineating physician roles** within primary healthcare units and those performed within a hospital outpatient department.
- **Free-up time of physicians** by allocating relatively 'low-skilled' tasks to other healthcare professionals (such an approach may require additional education training for other health care professionals).
- **Training and motivating existing professionals to adjust to re-allocations of tasks and responsibilities** given the number of physicians nearing retirement age.

Policy options: Monitoring and information needs

The following policy options relating to e-health are provided below:

- **Synergy potentials in data storage**: identify synergy potentials between data storage sites, while avoiding the construction of new sites, in order to make efficient use of existing capacity.
- **E-prescribing and recall system**: introduce automated electronic prescribing and a recall system for medical adherence to reduce prescribing-related errors, while concurrently improving control of prescriptions, reducing time spent on prescription queries and promoting continuity of care.
- **E-vaccination**: implement an e-vaccination application with a recall system in order to create an optimised overview of immunisation status and vaccination schedule, whilst preventing duplicate immunisations and possible adverse events from drug-to-drug interactions. A national electronic immunisation data collection system could further improve the monitoring and evaluation of immunisation rates in Austria.
- **Digital imaging in ELGA**: expand the database for digital images from different medical devices to improve site- and time-independent information sharing between medical professionals and health care enterprises to enhance operational efficiency and to prevent unnecessary repeat examinations.
- **Standardisation of the diagnosis classification system**: inclusion of outpatient diagnoses may constitute a better representation of a patient's medical history and interoperability could be improved by standardising the diagnosis classification system.

- **Evaluation and monitoring of a patient’s medical history:** a tracking system with a search function to monitor the development of specific parameters, such as blood pressure, may further enhance patient treatment. Further efforts should be undertaken to implement a patient summary.
- **Expansion of data collection:** a more extensive patient record, which, for example, includes information from the yearly medical check-up, could further improve patient-centred care, provided an insured person has expressed interest in the service.
- **Immediate sharing of information on health care use:** providing information on health care costs in addition to the utilisation of services through ELGA’s online portal could enable year-round access to necessary information for patients and prevent billing errors.
- **Dissemination of information on ELGA to health care providers:** develop ELGA showcases that could be presented to health care providers, such as pharmacies, to facilitate and support the roll out of ELGA across as many health care providers as possible.

Policy options: Pharmaceutical expenditure and procurement

The following three policies are recommended in regard to pharmaceutical expenditure:

- **Enhance international relationships** to gain a better understanding of drug transaction prices within the outpatient market. Currently, external reference pricing, which draws upon list prices, is used, which doesn’t necessarily reflect actual prices paid for drugs.
- Austria should consider **modifying domestic regulations on statutory prescription drug price cuts** so that they are linked to patent expiration rather than generic drug entry.
- **Limit the risk faced by payers and promote efficient use of resources** by introducing managed entry agreements.

To enhance the use of generics, the following policies are suggested:

- Given the increasing demand for healthcare services, we recommend **increasing the role of pharmacists** within the healthcare system, which would enhance efficiency and reduce the burden placed on physicians.
- **Incentivise physicians to prescribe more generics**, where appropriate.

Finally, to enhance procurement policies:

- Effort should be directed at **improving interface management between inpatient and outpatient pharmaceutical sectors** to limit cost-shifting and improve coordination of patient treatment. For

example, by developing a joint budget for all pharmaceuticals, enhancing the role of the Medikamentenkommission, and /or enhancing ELGA so that information regarding a patient's drug treatment (in both inpatient and outpatient settings) is easily understood by prescribers.

Policy options: Health literacy, disease prevention, health promotion

The following policy options relating to health literacy and disease prevention are provided below:

Health literacy

- **Improving health communication between patients and doctors:** Clear health communication between patients and doctors could be further improved by specifying specific criteria pertaining to the communication process (e.g. 'teach back'; avoiding jargon) in the Chamber of Physician's quality evaluation criteria of physician practices or in contracts.
- **Expand the dissemination of health information:** the national self-information portal could offer a number of additional language settings, other than German, in order to increase use of the site. A child-friendly, interactive information site could be developed as well.
- **Increase role of different stakeholders:** the role of various stakeholders in promoting health literacy should be increased. For instance, a point of contact for patients with limited health literacy levels should be defined to offer training and support, such as patient ombudsperson offices, while physicians could direct the respective patients to these contact points. Pharmacists could be further trained to identify and manage patients with lower literacy levels.
- **Module on health literacy:** a module on health literacy in the education setting (e.g. primary or secondary education) could be introduced to establish a solid and uniform health literacy knowledge basis across population groups.

Disease prevention

Immunisation

- **Inclusion of vaccinations in the mother-child passport:** create awareness and incentivize immunisation of children to increase low childhood immunisation rates.
- **Coverage of cost-effective vaccines for adults:** an additional coverage of adult vaccinations, where cost-effective, could potentially increase adult immunisation rates of a number of important vaccine-preventable diseases.

- **Walk-in vaccination and injection services at pharmacies:** by introducing walk in vaccination and injection services at community pharmacies, following a prescription by a physician, the immunisation process could be rendered more flexible, time-saving and convenient to patients.
- **E-vaccination to improve monitoring and re-calling of-, as well as data collection on vaccinations:** implement an e-vaccination application with a recall system in order to create an optimised overview of immunisation status and vaccination schedule, whilst preventing duplicate immunisations and possible adverse events from drug-to-drug interactions. A national electronic immunisation data collection system could further improve the monitoring and evaluation of immunisation rates in Austria.

Diabetes

- **Expansion of the diabetes disease-management-programme (DMP):** in order to improve the equity and quality of diabetes treatment in Austria, it is suggested to further strengthen efforts in the disease management programme, which should be gradually expanded over time.
- **Remuneration of DMP-physicians:** the financial compensation of DMP-physicians should be assessed in order to ensure appropriate rewards in line with the time taken to manage diabetes patients, and to incentivise more physicians to enter the programme.
- **Training of physicians:** inclusion of diabetes specific-tasks in the grid certificate may further expose physicians to additional training and as such improve the management of patients with diabetes. Another option is to render further training more binding by defining explicit follow-up measures in the case that physicians fail to follow the training.
- **Training of DMP-physicians:** the introduction of a voluntary training and a confidential supervision by experienced diabetes specialists may increase physician participation in the DMP programme.
- **Establishment of a national diabetes registry:** By extending data collection efforts, a national diabetes registry could be implemented in order to improve the collection of data to monitor and evaluate trends in diabetes.

Cardiovascular diseases

- **Comprehensive study:** Undertake a comprehensive study into the underlying factors of the high CVD disease burden and mortality in Austria. Based on the findings, appropriate measures could be introduced to reduce CVD-related morbidity and mortality.

Policy options: Case and care management

A total of eight policy options to enhance case and care management within Austria have been proposed:

- Target case management and other types of coordinated care based on need
- Pilot new models, evaluate pilots rigorously and scale up successful ones
- Increase organisational and financial integration of providers
- Ensure comprehensiveness of the range of services covered by case management
- Include inter-disciplinary cooperation in education and training programs of professionals
- Continue strengthening the role of primary care and embed case management in primary care
- Provide workplace and return-to-work interventions early
- Embed case management in broad return-to-work interventions.

Policy options: Administration costs

The following policy option relating to administration costs is provided below:

- **Administration caps:** link caps to potential economies of scale arising from more streamlined activities, as opposed to historical allocations. Alternatively, require health insurance carriers to justify higher administration costs, given such costs are often required to improve equality (e.g. performance measurement).

Policy options: Healthcare fraud

Healthcare fraud leads to a significant amount of waste in healthcare systems. To combat healthcare fraud and limit waste within the system, the following two policy options are recommended:

- **Comprehensive study:** Jointly undertake a comprehensive study into the types of healthcare fraud within the system (including associated costs). Based on these findings, implement appropriate policies to create an environment that limits the opportunity for fraud to occur.
- **Digitalisation:** enhance the sophistication of ELGA to enable health insurance carriers to better identify instances of healthcare fraud

1 Introduction

1.1 Review brief

In 2016, the London School of Economics and Political Science (LSE Health) was engaged by the Austrian Ministry of Labour, Social Affairs and Consumer Protection to undertake an efficiency review of the country's social insurance system (see Appendix A for the original Concept Note). The review was specifically targeted at health competencies within the social insurance system; for this reason, consideration of accident and pension insurance, as well as other forms of care covered by Federal and Länder governments, were only examined where directly applicable.

The review can be broken into four interconnected components, each led by a separate organisation. In the first instance, a legal analysis by professors at the University of Salzburg undertook a review of relevant provisions within the law, with findings summarised in *Volume 2- Legal Analysis*. Concurrently, an exercise to map out existing arrangements within the Austrian social health insurance system was completed by Contrast Ernst&Young. Primary and secondary data were used to collect relevant information with findings provided in *Volume 4 – Situational Analysis*. To ensure all relevant stakeholder opinions were collected and analysed, stakeholders, in addition to roundtable discussions (held in February and May 2017), were encouraged to submit a formal statement. *Volume 3* of this report – *Stakeholder Submissions* – combines these statements (see Appendix B for an overview of the invitation provided to stakeholders). Finally, drawing upon information collected in volumes 2-4, as well as further analysis of reports completed by Austrian organisations and experts, and international experiences, a range of policy options have been recommended to improve efficiency within the system (*Volume 1 – International Comparisons and Policy Options*) (see Table 1 for an outline of the review's components).

Table 1: Overview of the efficiency review into Austria's social insurance system

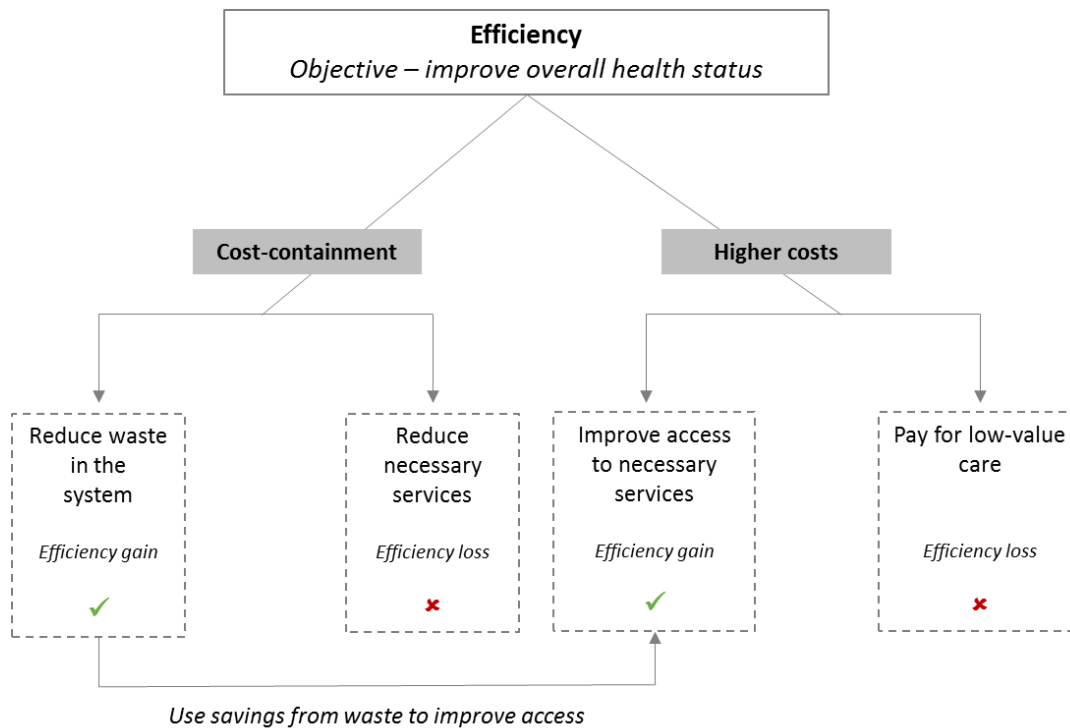
Volume number and report	Objective	Lead organisation
1 – International Comparisons and Policy Options	Compare the Austrian system to international experiences, and using this information, define a range of policy options to improve efficiency within the system.	LSE Health, including a team of international experts, and Institute of Advanced Studies

Volume number and report	Objective	Lead organisation
2 – Legal Analysis	Analysis of relevant legal considerations within the social insurance system	University of Salzburg
3 – Stakeholder Submissions	Compilation of formal submissions provided by key stakeholders within the Austrian social insurance system.	Compiled by LSE Health
4 – Situational Analysis	Map out current arrangements within the Austrian social health insurance system.	Contrast Ernst&Young Management Consulting GmbH

It is important to highlight that efficiency should not be equated with cost-containment, rather the overall objective of efficiency improvements is to enhance overall health status. Using this definition, efficiency gains can be achieved by either:

- Containing costs through a reduction in waste, or a reduction in necessary services (e.g. non-targeted user charges). If the latter, cost-savings will only be realised in the short-term, given patient healthcare costs are likely to increase in the long-term
- Improving access to necessary and beneficial services, through higher expenditure, or using savings from reducing waste (see figure below).

Figure 1: Conceptual framework to improve efficiency within healthcare systems



Source: Framework developed by author.

1.2 Structure of Volume 1 of the review

The following outlines the structure of the remainder of Volume 1, which is based on the Concept Note developed by the Ministry of Labour, Social Affairs and Consumer Protection (see Appendix A). Please note, a description of the Austrian situation for each component of the review has been provided within this report, however, for a more detailed description of arrangements within the Austrian social insurance system, please see *Volume 4 – Situational Analysis*. Legal considerations for each of the policy options has also been provided, in brief, in this report. Similarly, for further information, see *Volume 2 – Legal Analysis*.

- **Chapter 2** provides an overview of the Austrian health care system, including current strengths and challenges
- **Chapter 3** compares key health care indicators in Austria against those in European and OECD countries
- **Chapter 4** outlines the current social security system and provides policy options for how the system could be re-structured to improve efficiency

- **Chapter 5** examines financing mechanisms within the social insurance system including contributions and aligning benefits, user charges, investment activities and the social welfare base
- **Chapter 6** relates to contracts and purchasing arrangements, which covers provider reimbursement, contractual agreements, healthcare quality, the workforce (physicians, specifically), monitoring and information needs, and procurement of pharmaceuticals
- **Chapter 7** relates to public health and disease management, specifically ill-health prevention, health promotion and literacy, and case management
- **Chapter 8** explored additional efficiency potentials arising from administration, healthcare fraud and business IT processes
- **Chapter 9** provides an overview of the review, including all policy options recommended.

1.3 Overview

Our analysis of the Austrian social health insurance system revealed that the system is both complex, as a result of its multi-level governance structure, and fragmented given the dual nature of financing. Specifically, outpatient care (i.e. GPs, outpatient specialists and pharmaceuticals) is financed by social health insurance, whereas inpatient care (including pharmaceuticals) falls under the joint responsibility of federal and Länder (state) governments (with social health insurance paying a fixed share of contributions). Such an arrangement fosters various inefficiencies including cost-shifting, and discourages continuity of care, which leads to higher overall costs (e.g. high level of unnecessary hospitalisations).

This finding is not new, and has been highlighted by various research institutions, as well as policy-makers, as a key barrier to improving healthcare system efficiency. As a result, in recent years, many efforts have been made to improve coordination and align incentives. For example, under the 2005 Healthcare Reform, State Health Funds were introduced to improve coordination between the intra- and extra-mural sectors (e.g. Reform Pool initiative). Further, under the most recent reform (2013), the concept for primary healthcare units (PHUs) was introduced; today two units are in operation with plans for 75 PHUs by 2020.

Ultimately, the problem of dual financing can only be overcome with major constitutional reform required to create joint budgets that span the entire spectrum of care (i.e. primary, outpatient, inpatient, long-term and social care). However, we recognise the extreme legal difficulty implementation of joint budgets presents given a two-thirds majority within Parliament is needed. In response, the policy options within this report present pragmatic approaches to enhance coordination and improve efficiency.

Another key issue that has been raised, is that concerning the number of social health insurance carriers. Multiple purchasers of healthcare is not uncommon, for example, in England, responsibility for purchasing services is devolved to over 200 Clinical Commissioning Groups. Further, in Sweden, provision of healthcare falls under the remit of 21 county councils and regions. For this reason, the total number of carriers, in our opinion, is not viewed as the most important barrier to achieving efficiency. Nevertheless, options to enhance efficiency by amalgamating carriers and encouraging coordination have been proposed.

In our opinion, the two pressing challenges facing Austria refer to the types of services procured by purchasers, and secondly, by the allocation of funds to purchasers. In regard to the former challenge, Austria is unique in that healthcare purchasers operate in silos (i.e. insurance carriers versus Länder), that is, purchasing care for a portion, as opposed to all healthcare services. Concerning the latter, only a small proportion of health insurance carrier funds are risk-adjusted, which results in inequities. This is also the case with other resource allocation mechanisms in Austria (i.e. federal government to the Länder or from social health insurance to the Länder), which are mostly based on political negotiations and historical allocation patterns.

Limited risk-adjustment has meant that, despite uniform contribution rates (with the exception of the BVA, which only differs by 0.015%, and the farmers (SVB)), differences in benefits for specific services may occur. Such an arrangement is inequitable and goes against international trends. However, it is worth highlighting that self-reported unmet need (healthcare) in Austria is one of the lowest in Europe (see Figure 2, which outlines the three dimensions of universal health coverage).

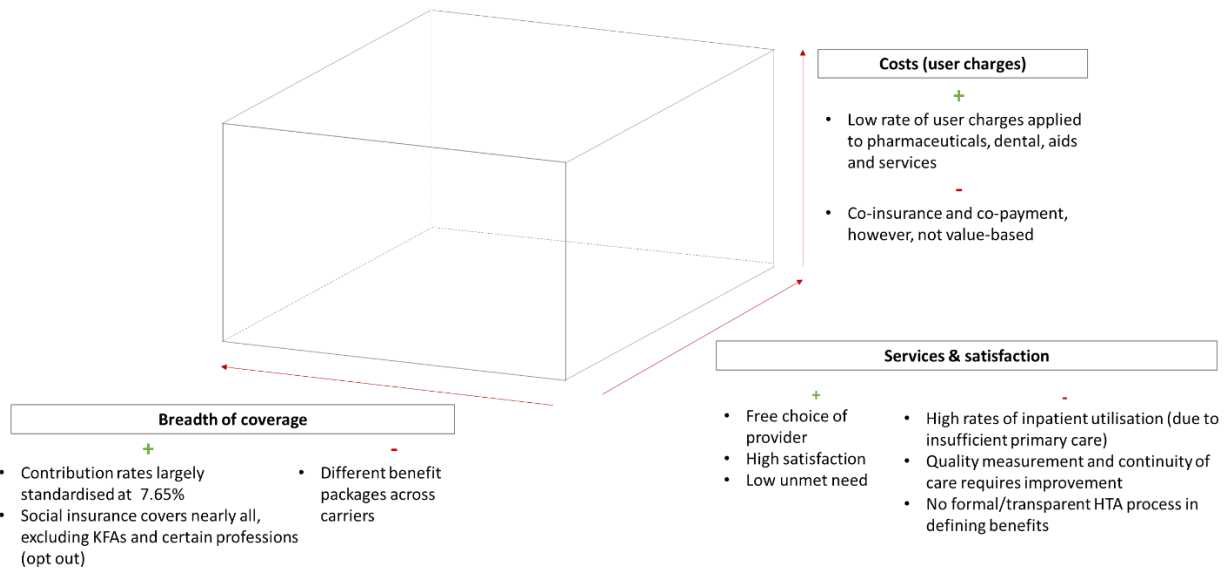
Ensuring high-quality care has also been a key agenda for policy-makers over recent years. For example, with the introduction of the Federal Institute for Quality in Healthcare Systems (including the Austrian Society for Quality Assurance and Quality Management in Medicine), as well as quality indicators for inpatient (Austrian inpatient quality indicators, A-IQI) and outpatient care (Austrian outpatient quality indicators, A-OQI). Despite this, the types of quality indicators measured, in addition to the uses of information collected in Austria, could be enhanced. More robust information on quality within the system will ultimately improve patient outcomes via the development of evidence-based policies (see Figure 2).

Finally, it is evident that more recently Austrian policy-makers have recognised public health as a key area for enhancement, for example, with the development of the diabetes disease management program. Nevertheless, through discussions with stakeholders, in addition to findings within the policy and

academic literature, it is clear that relative to other advanced European countries, Austria's primary care and public health sectors could be significantly improved. This is evidenced by, for example, low rates of vaccinations and lower than average life-expectancy projections, as well as high inpatient admissions rates, including those for ambulatory care sensitive conditions (e.g. diabetes and asthma). Such findings reiterate the need for further investment in primary care and public health, while being cognisant that, in the short-term, cost-savings are unlikely, given the presence of fixed hospitals costs (e.g. labour and maintenance) (see Figure 2).

Key findings, as described above, have been summarised in the following figure outlining the three key dimensions within universal healthcare systems. The dimension 'breadth of coverage' outlines who is covered by pooled funds, 'services and satisfaction' refers to what services are covered, while 'costs (user charges)' explains what proportion of costs for services are covered. Key findings within the Austrian system have been categorised as either positive, or requiring improvement (1).

Figure 2: Dimensions of universal health coverage



1.4 Summary

Based on the findings outlined above, a number of policy options to improve efficiency within Austria's social health insurance system have been proposed. In reviewing these policies, we offer policy-makers and stakeholders the following recommendations: firstly, to view policy options outlined in this report, as well as those by various Austrian research institutions and organisations (including stakeholder submissions – Volume 3 of this review); secondly, to ensure future discussions and implementation of policy options be done in a transparent and inclusive manner so that key stakeholders do not view change as a 'zero-sum game'; and thirdly, to keep in mind that no healthcare system is perfect, and that any future efforts should build upon current successes, which in the case of Austria, include high-levels of population satisfaction as a result of ease of access to healthcare services, and low levels of unmet need.

2 Overview of the Austrian social security and healthcare system

Chapter 2 provides an overview of the Austrian healthcare system including major stakeholders and their function. Following on from this description, an overview of key strengths and challenges facing the system are explored. Given the overall report is focused on improving efficiency, significant emphasis has been placed on 'challenges' as findings were used to identify efficiently potentials

2.1 Organisation of the health system

Austria is a federal state made up of nine states (Länder), who in turn are comprised of municipalities, with the exception of Vienna (2,3). Both federal and state governments are vested with legislative and executive powers. Municipalities, on the other hand, are not granted legislative powers, instead, they issue ordinances to fulfil federal state administrative tasks.

In international terms, Austria's healthcare system can be classified as a social health insurance system, given, primarily, employers, employees and the self-employed pay contributions in return for access to a package of healthcare services (2,3). The healthcare system is characterised by its dual nature, whereby competencies, and thus financing arrangements, are split between federal and state governments, and social health insurance (3,4). Specifically, outpatient care (i.e. GPs, outpatient specialists and outpatient pharmaceuticals) is financed by social health insurance, whereas inpatient care (including pharmaceuticals) falls under the joint responsibility of federal and Länder governments (with fixed contributions from social health insurance). As a result, the system has often been referred to as both complex and fragmented (3). For example, although most major healthcare forms fall under the legislative competency of the federal government (Article 10, 12 B-VG), they require approval from the states (Bundesländer). Therefore, provision of hospital care often dominates the political debate (at the expense of other forms of care) (3).

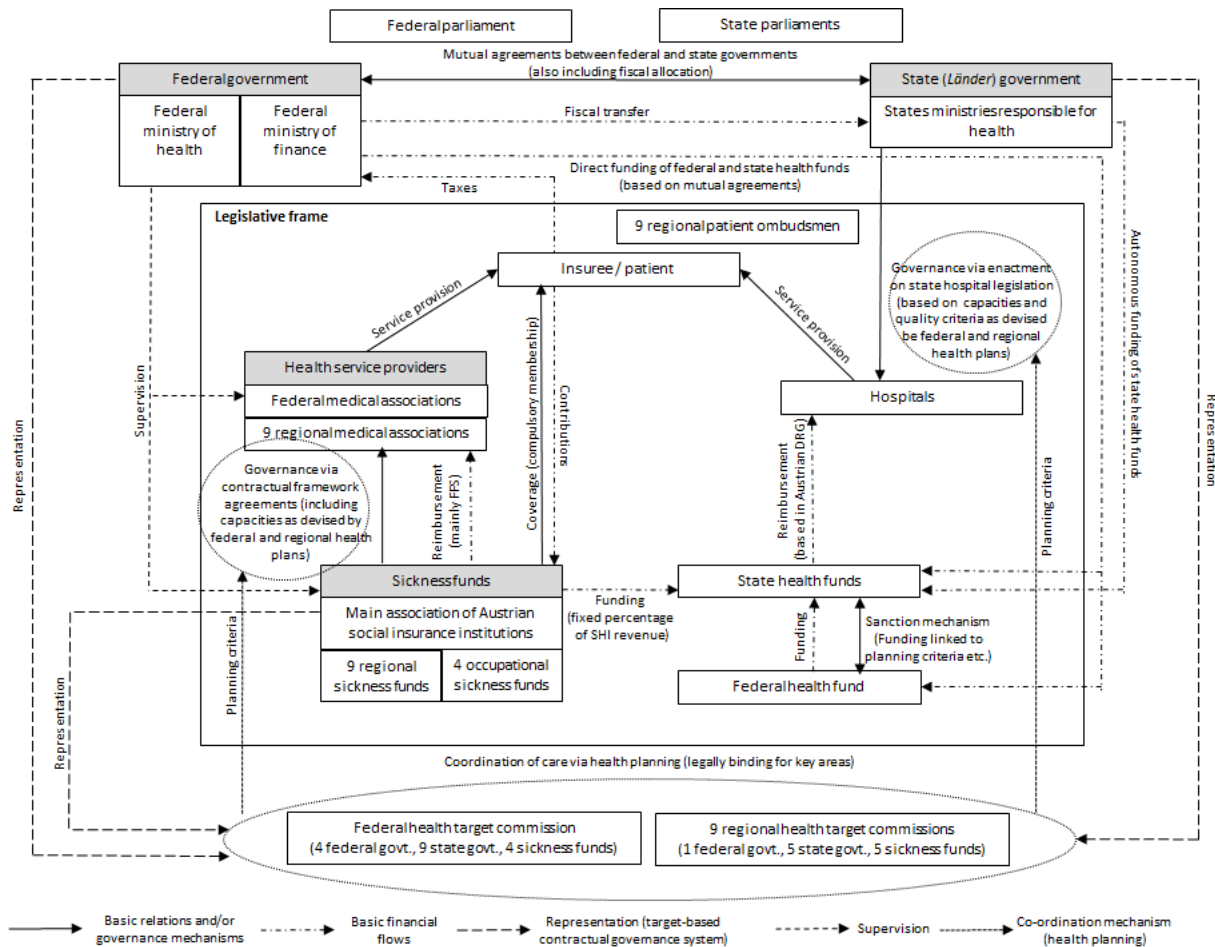
Various actors are involved in organising the Austrian health system. Each actor differs in terms of their political legitimation and inner governance mechanisms. Social health insurance carriers, as well as the professional bodies, are established on the basis of occupational and/or regional membership and operate as self-governing bodies (however, the Federal Government is responsible for social insurance legislation) (3). As a result, social insurance carriers enjoy autonomy from government intervention, for example, by appointing their own supervisory boards (3). Federal and state governments, on the other hand, are directly legitimised by the electorate.

As stipulated by constitutional law, the federal government is primarily in charge of regulating healthcare. Within social health insurance, carriers are subject to different laws, specifically the ASVG applies to GKKs (regional health insurance carriers, Gebietskrankenkasse), BKKs (corporate health insurance carriers) Betriebskrankenkasse) and the VAEB (railways and mining insurance carrier, Versicherungsanstalt für Eisenbahnen und Bergbau), the GSVG for the SVA (self-employed insurance carrier, Sozialversicherungsanstalt der gewerblichen Wirtschaft), the BSVG for the SVB (farming insurance carrier, Sozialversicherungsanstalt der Bauern), and the B-KUVG for the BVA (civil servants carrier, Versicherungsanstalt öffentlicher Bediensteter). In regard to hospital care, the Federal Government is only responsible for setting the framework for regulation, with state governments delivering healthcare services in order to meet their constitutional obligation.

As shown in the figure below, the current legal framework has led to a high number of actors involved in the organisation and governance of the health system. To improve coordination between social health insurance, and federal and state governments, several initiatives have been introduced (3,5). For example, in 2005, State Health Funds were implemented for the purpose of pooling funds from social health insurance, and federal and state governments to finance public acute care hospitals (according to the country's DRG system).¹ Their role is also to improve coordination between intra- and extra-mural sectors (e.g. 'Reform pool' initiative). Further, under the 2013 Healthcare Reform, both federal and state target control commissions were established to help achieve the country's overall health target of increasing the number of healthy life years by two over the next 20 years (e.g. by enhancing population health literacy (target 3) and encouraging positive nutritional habits (target 7)).

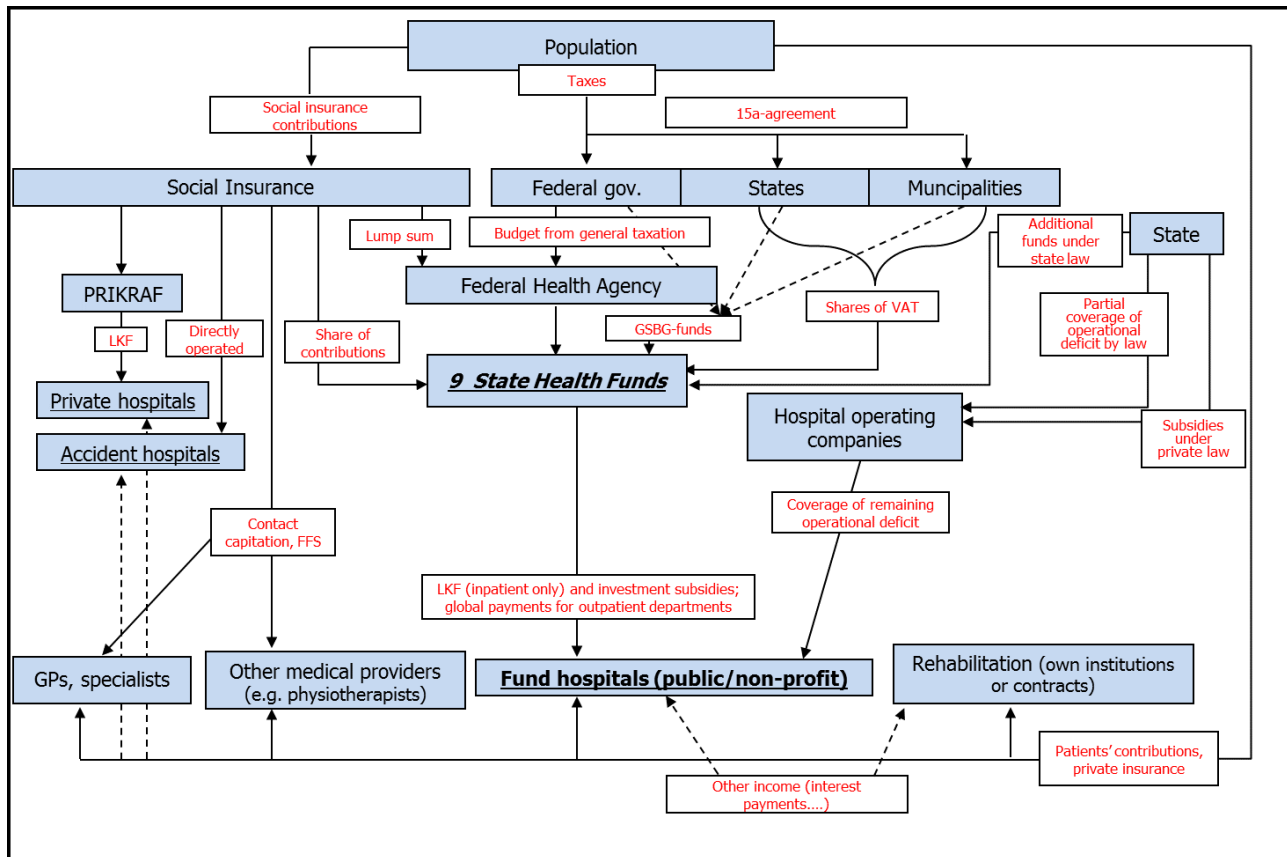
¹ State Health Funds are the primary form of financing for hospitals, however, additional funding stems from general taxes, municipalities, VAT and social insurance.

Figure 3: Organisation of the Austrian Health System, 2017



Source: Ostermann, H. 'Organisation and governance of the Austrian health system'. Working paper (unpublished) for the Austrian HiT-report (forthcoming 2018). 2017.

Figure 4: Organisation of the Austrian Health System, 2017, financial flows



Source: (6)

2.1.1 Governance

The various actors involved in the Austrian health system can best be described by their (inherent) governing structure and/or corresponding area of governmental sovereignty. The relevant categories therefore encompass the federal level, the state level, and social health insurance level.

Federal level

At federal level, the federal parliament, as the representation of legislative power, as well as the Federal Ministry of Health and Women's Affairs and, to a lesser extent, the Federal Ministry of Finance represent the key actors in health system governance.

There are various commissions in charge of advising the Ministry of Health and Women's Affairs, all of which require significant medical and/or scientific expertise. The most prominent commission, in this regard, is the Supreme Health Board (Oberster Sanitätsrat), which advises the Ministry on specific medical

queries, including ‘start of the art’ medical technology and services. In addition to the Supreme Health Board, various advisory boards have been established based on mutual agreements set out in Article 15a agreements of the Federal Constitution, or directly on behalf of the Ministry, according to §8 Bundesministeriengesetz.

The Ministry is also supported by subordinate agencies responsible for various consultancy tasks regarding areas such as information services, food and health safety, and technical infrastructure. For example, by the Austrian Public Health Institute (Gesundheit Österreich GmbH),² Austrian Agency for Food and Health Safety (Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH)³ and the Electronic Health Record Company (ELGA GmbH)⁴.

Länder (state) level

Developing the framework for legislation falls under the remit of the Federal Government, however, it is the Länder governments who implement detailed legislation (3).

At the level of the Länder (states), the state parliaments, as well as the state ministers responsible for healthcare, represent the main actors in regard to health system governance. The remit of state health ministers, in general, encompasses the following areas of responsibility:

- General issues of (public) health
- Hospital care (running their own hospital or contracting out to providers)
- Ambulatory services
- Healthcare labour
- Long-term care.

As previously outlined, the Länder are responsible for providing hospital care, specifically by ensuring the availability of adequate hospital capacity. Hospital services are either provided by public state-owned hospitals or public hospitals run by not-for-profit institutions. Regardless of ownership, hospitals are reimbursed by State Health Funds (which receive monies from federal, state and local governments). All

² The national public health research and planning institute, which also administers the Federal Funds for Health Promotion (Fonds Gesundes Österreich).

³ Joint agency of the Ministry of Health and Women’s Affairs and the Ministry of Agriculture, Forestry, Environment and Water management in charge of the protection of human, animal and plant health, of medical and drug safety, as well as of food security and consumer protection along the food chain.

⁴ Joint institution of the Federal Government, the state governments and social health insurance carriers. The company is responsible for further development of the national e-health infrastructure as well as for the coordination of all relevant activities to roll-out electronic health records.

states, with the exception of Vienna, have established state-owned operating companies for their hospitals, most of them in the form of a public or private limited companies.

Finally, all Länder have established patient ombudsman/lawyers (Patientenanwälte) offices. Each ombudsman operates as an independent institution responsible for informing patients of their rights, as well as acting as mediators and advocates of patient interests where poor-quality care or malpractice has occurred.

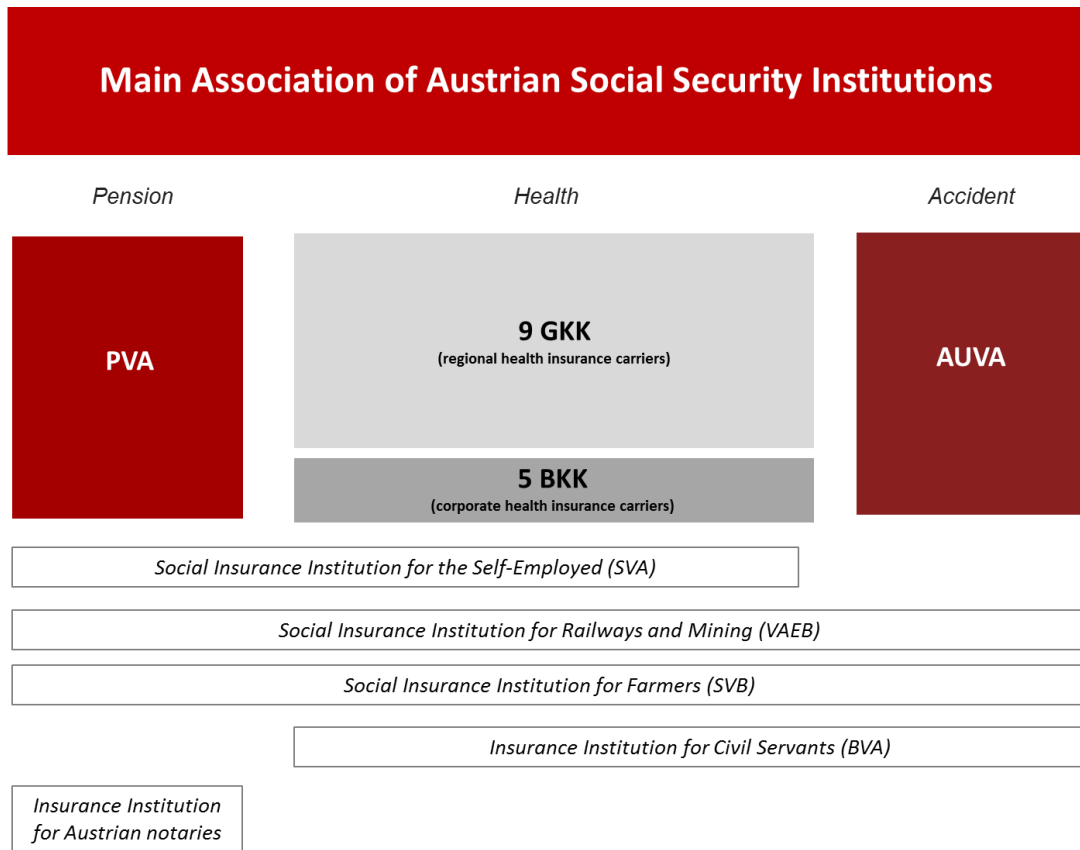
Social health insurance

The primary self-governing bodies relevant within the health care system are the social insurance carriers. In addition, there are professional bodies representing health service providers (predominantly the Chamber of Physicians), as well as voluntary professional associations (3).

The current organisational structure of the health insurance system was established in 1947 under the Social Insurance Transition Act, which established the Main Association of Austrian Social Security Institutions (Hauptverband der Österreichischen Sozialversicherungsträger, HVSV). The HVSV operates as the umbrella organisation for all insurance carriers operating within social insurance, which also covers pension and accident insurance. Theoretically, the HVSV is responsible for coordinating all social insurance carriers, however, in effect, it relies upon the cooperation of its members (i.e. the carriers) (3).

The HVSV currently includes 21 social insurance carriers, 18 of which offer health insurance (see figure below). The vast majority of the population are covered by social insurance (i.e. 99%), given, by law, Austrian inhabitants are assigned to an insurance carrier based on their employment status. Specifically, *most* employees (and their dependents) are insured by a regional health insurance carrier (GKK) corresponding to the location of their employment. Employees not covered by GKKs include railway workers and miners, self-employed, farmers and civil servants. Each of these employment groups are insured with carriers specific to these groups, which in addition to health may also provide work accident and/or pension insurance. Five, relatively small, professional health insurance carriers (BKK), based on former key public industries, also offer health insurance. In addition to these social insurance carriers within the HVSV, some groups of Länder and municipal civil servants are insured with one of 15 KFAs (Krankenfürsorgeanstalten), offering health and accident insurance. The KFAs are not represented in the HVSV and their establishment under Länder law is provided for by the B-KUVG.

Figure 5: Organisation of Austrian social insurance, 2017



Additional 15 health and accident institutions for certain civil servants exist at the Länder or community level, which operate outside the Main Association.

As previously discussed, health insurance carriers are responsible for the provision of outpatient care for its insurees (3). To carry out this function, carriers must engage in negotiations with the Chamber of Physicians (with one operating in each state), to create a general contract outlining reimbursable services and associated fees. In addition, health insurance carriers may also provide care with their own institutions (3).

2.2 Strengths

2.2.1 Access

The Austrian healthcare system performs well on all dimensions of healthcare coverage as it is based on a social insurance model that guarantees all inhabitants equitable access to high quality health services – irrespective of their age, sex, origin, social status or income. Thus, access to healthcare services is high

with 99.9% of the population being covered by the social health insurance system (7). Most of the remaining 0.01% are able to opt out in favour of full private health insurance (e.g. physicians). Relatively low co-payments for services also enhance access to healthcare. Persons who are chronically ill or persons from vulnerable groups are exempt from most co-payments. Also providing for timely access to acute and emergency services is the number of most provider types and the wide availability of services for the population due to planning criteria already factoring in accessibility.

2.2.2 Equity

Equity, in regard to access to healthcare, is also high given that the social health insurance system covers vulnerable groups such as asylum seekers and needs-based minimum benefits recipients (8). In terms of services provided, very few Austrians report unmet needs in terms of medical or dental examinations due to costs, travel or waiting times according to an analysis of EU-SILC (Statistics on Income and Living Data) (7). Further, the income gradient among reported cases is low, indicating equitable access to care. All in all, this equitable access can be ascribed to the principles of the Austrian healthcare system, which are solidarity, affordability and universality and to the fact that patient rights are not only legally defined but can also be enforced by law. Patient ombudspersons in each Land ensure low level access to assistance in cases of malpractice and other types of misconduct irrespective of the individual's capability to cope with such matters.

2.2.3 Resilience

The Austrian healthcare system is very stable in terms of the ability to create revenues and to provide services. This can probably be attributed to the overall economic policy and industrial relations geared towards stability, for which the tradition of compromise among the social partners seems to be key. What is more, the system of self-governed social health insurance provides for some independence from political and subsequent budgetary changes in the federal government. As a result, during the economic crisis of 2008 and onwards, the Austrian healthcare system proved comparably resilient (9). Further, the 2013 healthcare reform established a common understanding of a vision for the Austrian healthcare system as well as instruments to find joint solutions for necessary change among SHI, Länder and federal government.

2.2.4 Satisfaction

Finally, patients seem to be satisfied with the overall quality of healthcare in Austria: According to the Eurobarometer, 96% of the population regard the system as 'good' and rate the quality of healthcare

compared to other EU Member States as ‘better’ (60%) or ‘the same’ (34%) (10). A factor which could play a part in contributing to the high satisfaction is the free choice of healthcare providers alongside their availability. This high satisfaction could also be linked with a high self-reported health status of 70%, i.e. almost three quarter of the Austrian patients classify their health status as being ‘good’ or ‘very good’ (11).

2.3 Challenges

2.3.1 Governance

Split competences

A fundamental issue in the Austrian healthcare system is the split in competencies between the federal and Länder level, which is outlined in the constitution (3). In regard to general healthcare, laws are passed at the federal level, which includes laws social health insurance is based upon. It is also at the federal level that responsibility for executing the law lies (art. 10 of the constitution). In regard to hospital care, the Länder have the right to pass and execute laws on the basis of a more general federal law. The Länder, alongside municipalities, are also responsible for long-term care, however, it is the federal government who funds the long-term care allowance through pension insurance carriers. A similar overlap in competencies exists for areas of healthcare concerning people with disabilities (see Volume 2 – Legal Analysis for further details)

This fragmentation makes intergovernmental negotiations necessary. Specifically, approximately every five years such discussions lead to an agreement according to art. 15a of the constitution on the organisation and financing of healthcare. This split in competencies is frequently discussed in the literature as a major obstacle to improving health service delivery, especially for the chronically ill. Accordingly, Austria is not a top-performer in regard to rates of chronic diseases among countries in Europe (6,12–17).

Previous attempts to attribute whole areas of governmental tasks to only one level of government were not successful. Neither the ‘Österreichkonvent’ 2003-2005⁵ nor the working group on administrative reform 2009-2011 brought about a change in this constitutional setup. The healthcare reform 2005 aimed at creating platforms on the federal (Federal Health Commission, *Bundesgesundheitskommission*) and

⁵ Results of the Österreich-Konvent are presented on <http://www.konvent.gv.at/>

Länder level (State Health Platform, *Landesgesundheitsplattform*) to jointly plan the structures and take decisions in the Austrian healthcare system. Moreover, a common planning framework, the Austrian Structural Plan for Health (*Österreichischer Strukturplan Gesundheit, ÖSG*) was introduced, to be substantiated on the Länder level between Land and SHI as the Regional Structural Plan for Health (*Regionaler Strukturplan Gesundheit*). However, the success of the reform as a whole seems to have been limited and the Austrian Structural Plan has been criticised for its limited ability to achieve coordination of planning (18,19). Thus, the healthcare reform 2013 institutionalised a common governance instrument, the target control system for health (*Zielsteuerung Gesundheit*), alongside virtual common budgets between SHI and each Land, subject to a maximum expenditure growth path. It also instated a second body on both federal and Länder level, the Federal Target Control Commission (*Bundeszielsteuerungskommission*) and the State Target Control Commission (*Landeszielsteuerungskommission*), responsible for planning and executing the target control instrument (Gesundheitsreformgesetz 2013). These new institutions consist only of representatives of the main payers in healthcare, the federal government, the Länder and SHI and seem to be an attempt to reduce the complexity in decision making processes. In 2017, with a new 15a-agreement for both organisation and financing as well as target control, structural planning was made more compulsory by instating the 'Gesundheits-Planungs-GmbH', a limited liability company receiving sovereign rights from both the federal and the Länder level to make parts of the structural planning mandatory by official decree (Vereinbarungsumsetzungsgesetz 2017). The Federal Target Control Commission replaced the Federal Health Commission as the governing body of the Federal Health Agency.

Fiscal and parafiscal federalism, veto players

The split of competencies within healthcare between the levels of government entails that healthcare is heavily affected by fiscal federalism (20). Over the years, negotiations resulted in numerous rules and exceptions, making the financial flows complicated and thus in-transparent (6,13,21). In addition to fiscal federalism, the same phenomenon applies to social health insurance, as every insurance carrier is self-governed and entitled to its insurees' contributions. Federal, Länder and SHI's contribution to hospital financing as well as partial equalisation between insurance funds are based on historical values instead of needs, and are incomplete. What is more, as the federal government levies taxes in the name of all levels of government, this paves the way for 'fiscal illusion': An expansion in hospital services by Länder governments might be favourable with voters, who in turn are not directly burdened by increased Länder taxes (21). While budget constraints apply and debt burden is limited by the stability pact, some Länder

were indeed creative by e.g. having the hospital operating companies taking on debts, indicating the need for a transparent way of needs-based allocation for tax money.

Federal structures can also be found in most other corporatist elements in Austria. The social partners as the main carriers of social health insurance as well as the Chamber of Physicians have federal structures as well. Together with the strong role of government levels in a Bismarckian healthcare system, Austria has to cope with an unusually high number of veto players, making the process of healthcare reform more complex (15,22).

Governance of social insurance funds

Many European countries ensure responsiveness to insurees either by the introduction of competition (either between more public funds like in Germany or Belgium or between private insurer like in the Netherlands and Switzerland) or by improving their representation (e.g. in Scandinavian countries). While competition might be beneficial in terms of improving responsiveness, it is also prone to unwanted risk-selection. Establishing effective and efficient representation, on the other hand, also proves to be a challenging task.

Austria is one of the few countries with a Bismarckian system in Western Europe that has not introduced choice and competition between insurance carriers, further the system continues to rely on compulsory profession-based insurance (23). Governing bodies are elected indirectly whenever the employers' or employees' chambers hold elections. These governing bodies send their chairpersons to form the governing body of the Main Association of Social Security Institutions (HVSV). As a result, both voice and choice for insurees are rather limited, which limits the incentive for carriers to be responsive and innovative (22). For example, one study (24) finds one of the reasons that DMPs have not been successful is that insurance carriers lack the incentive to reallocate means accordingly. Thus, introducing some elements of competition, e.g. yardstick competition while at the same time improving representation would contribute to system efficiency.

Hospital laws

With regard to the hospital sector, it is difficult to assess and compare the performance of hospitals across Austria given the current competence distribution and financing arrangements (dual financing). Through the existing competence distribution in many fields there are ten hospital laws (one for each Land and one federal law). Currently a pattern relating to Länder laws can be seen, which shows that the Länder either take over federal legal regulations or implement them by means of own expressions with identical

content. Thus, there are ten legislators, administration departments and legal departments employed with identical topics. In this area a bundling of legislation to the federal level would have a high efficiency potential (i.e. by implementing laws in a more timely manner). The Austrian Court of Audit identified several potentials in its report 'Verwaltungsreform 2011' (Bund 2011/1), for example, the fragmented constitutional competences in health care, the deficient coordination between the intra- and extramural sector, the overload of the inpatient sector, the high location density, insufficient balance of services and collaborations, the lacking cross-carrier service offer, the service shift between intra- and extramural sector and the absent quality measurement and assurance (25). For further details regarding possibilities to re-distribute competences with respect to the hospital laws, and in accordance with the constitutional law, please see Volume 2 – Legal analysis (Chapter 6).

2.3.2 Revenue collection and pooling

Contribution base

For SHI, the contribution base is income by the employed, their employer's part of contributions and income by the self-employed. With the exception of farmers, a uniform contribution rate is then applied. There are no recent studies measuring the degree of equity in financing. However, some older studies show that the social health insurance system was more regressive than other European SHI-systems at the time of the respective studies (23,26,27). This narrow (i.e. only work-related) contribution base is somewhat mitigated by the fact that the contributions to hospital financing and some other health related activities from all levels of government are based on VAT and general taxes. Nevertheless, Austria has one of the highest tax wedges in the OECD (28).

Contributions are collected by each health insurance carrier separately. Where people have more than one source of income, this might mean that they are multiple insured. On the one hand, multiple insured must actively ask for refund if they reach the maximum contribution level with all insurance carriers combined. On the other hand, they can choose their insurer in every case of health service provision. Thus multiple insurees, for example, can avoid user charges in one case, while benefitting from high reimbursement for medical appliances in another, raising equity issues in an insurance system without competition (16).

General taxation also subsidises healthcare through the system of 'Hebesätze'. These 'Hebesätze' are a fictitious employer's contribution for pensioners, paid by the respective pension insurance. However, given the federal government subsidises pensions (with the level of subsidisation differing across carriers), the general tax payer effectively subsidises some funds more generously than others.

Pooling across risks and income

Due to the profession-based insurance system, with the regional health insurance funds as a default, risks as well as income groups are distributed unequally. Nevertheless, no internationally comparable comprehensive risk-adjustment system is in place (16). Only the regional health insurance funds take part in the equalisation fund according to §447a, redistributing 1.64% of contributions.⁶ As per capita income of insurance funds varies considerably, a major mechanism to reduce the difference in per capita means are the very different tariffs for contractual partners and equalisation funds for various areas like hospital financing. Further mechanisms are in place e.g. mutually reimbursing work accident insurance and health insurance, albeit only through historically based lump sums.

As a considerable part of healthcare is funded by the federal government and the Länder, risk-equalisation is also an issue there. However, the fiscal equalisation system is mainly based on negotiations rather than a risk or needs-based allocation formula.

Differences in entitlement and reimbursement

Due to historical developments as well as different incomes per recipient, entitlement to services and reimbursement vary between the insurance carriers. While some general rules are defined by law, the insurance carriers' statutes and so called 'Krankenordnungen' play a major role in defining entitlement and reimbursement. The HVSV issues a template statute and a template 'Krankenordnung' and make certain items compulsory for all insurance carriers (§455 and §456 ASVG). However, as the governing body taking the decision in the HVSV consists of the chairpersons of the insurance carriers, there are only few such mandatory clauses, which can also be seen from comparing the statutes in the SozDok⁷ or HVSV (2016) (29). The KFAs, which are outside the HVSV, seem to have even more generous deviations from the average insurance fund, for example, reimbursing all costs incurred by non-contract providers (as opposed to the 80% offered by other carriers). This, however, raises equity concerns, as insurees can neither choose their fund nor have effective voice options, while paying the same contribution rates.⁸

⁶ For more information on the risk-equalization fund according to §447a ASVG see SAR or SGKK(2006)

⁷ SozDok ist he documentation system of social insurance law, www.sozdoc.at

⁸ This is partly mitigated by the fact that some funds have higher user charges.

2.3.3 Purchasing and provision of services

Public health

As with other fields in healthcare, the tasks within public health are split between all levels of government and SHI. In its inception, SHI was aimed at providing care for the ill, and only in the last two decades was tasked with measures of prevention and health promotion (see changes to §116 ASVG). The healthcare reform of 2013 tackled some of the issues already laid out in a report of the European Observatory on Public Health in Austria, most notably to adopt the concept of health in all policies and making prevention and health promotion an explicit goal (30). Nevertheless, Austria still lags behind in some major public health areas, like tobacco control, where it takes the last rank in the tobacco control scale 2016, as well as in alcohol consumption (17,31).

The healthcare reform 2013 also introduced a system of health targets. Ten very broadly defined framework health targets (*Rahmengesundheitsziele*) were determined. These are monitored by 40 Meta-indicators (32). Each framework target has several operative targets (*Wirkungsziele*), each of which are again to be monitored by 1-2 indicators. For each operative target, several pre-existing or newly developed measures were defined, each of which is to be measured by one indicator. In addition to this, the target-control health (*Zielsteuerung Gesundheit*), mainly concerned with the healthcare system proper, is governed by 26 targets monitored by 106 indicators (33). While it is admirable that after a long time with little activity in the field of public health, considerable efforts were made to catch up, the number of targets and measures seems overambitious. International experience shows that a lower number of targets that are widely shared among the stakeholders but consequently observed on all levels is the more promising approach (34,35). Indeed, the latest federal target control agreement (*Bundeszielsteuerungsvertrag*) shows a reduction of targets at least for target control health.

Ambulatory care: structure and personnel

The ambulatory sector is split between outpatient departments in hospitals and physicians in private practice (extramural sector). Both subsectors provide a wide range of specialist services, creating an overlap and interactions that provide the opportunity for supplier-induced demand (36). There is little integration, as SHI is responsible only for services outside the hospital. Access to both subsectors is not limited or coordinated, creating the opportunity to overconsume services while at the same time hampering coordination of care. In the extramural subsector, the predominant form is single practice,

limiting its ability to cater to the needs of complex patients or cases out-of-hours, and thus, continuity of care.

In the extramural sector, the typical practice consists of the GP or specialist and their practice aid. Efficient allocation of tasks to differentiated non-physician personnel is not possible. In general, Austria performs poorly in terms of true primary health care, leading to comparably low performance in terms of avoidable hospital admissions and outcomes in chronic diseases (37–39). This major downside is planned to be tackled by the PHC-law, allowing different groups of health professionals to work together. If a true primary care based system is to be implemented, GPs need to be able to cope with a wide variety of health and social problems that can mainly be found in GP-practices. Gaining experience with the setting before taking a post as a self-employed GP in the field, however, is difficult because postgraduate training for GPs is still primarily situated in hospitals despite a recent reform (Ärztinnen-/Ärzte-Ausbildungsordnung 2015 – ÄAO 2015).

Ambulatory care: contractual arrangements

In order to contract GPs and specialists working in practices, SHI has to engage in negotiations with the regional Chamber of Physicians for all physicians (GPs and specialities) combined. Selective contracts with only one speciality or single physicians without a general contract is not envisaged by the law. This joint negotiation therefore probably increases the veto-power of every single speciality, as only a so called general contract (*Gesamtvertrag*) with all specialities together can be concluded (14,22).

In order to ensure similar general contracts, the Main Association of Social Security Institutions in theory has to negotiate all general contracts on behalf of each sickness fund (§341 ASVG). However, this is purportedly not the case, perpetuating a great diversity in contracts as well as fee schedules. The diversity does not only pertain to the height of the tariff for one and the same service, but also the items themselves, leading to considerable differences in the number and thus the structure of the fee schedules, as can be seen in the meta fee schedule of the Main Association of Social Security Institutions that tries to match the different items to a common list. Apart from the fee schedule, the number of contract physicians per region are negotiated (§342 ASVG). The positions themselves, however, are filled through a list handled by the Chamber of Physicians, creating an individual contract between the insurance fund and the physician. Thus, the respective insurance fund cannot decide to contract a specific person on its own. The list is filled based on criteria proposed to the MoH by the Chamber (§343 (1a) ASVG), e.g. professional experience, additional qualifications, time on the waiting list etc. While SHI can only terminate an individual contract due to severe misconduct by the physician, a contract physician can

terminate at any time with a three-month notice period. In case a general contract terminates without a new general contract or the general contract is terminated by one of the parties, an arbitration committee can only extend it for a limited period (§348 ASVG). After that, all individual contracts expire, and all patients need to pay for physician services out of pocket and have to submit the invoices to their insurance fund. As this is a severe administrative burden and an inconvenience to patients, it has been argued that the current negotiation framework favours the physician side (40). It has also been argued that SHI is very limited in the way it can fulfil its task according to §338(2) to provide adequate medical care to its insurees, which, in contrast e.g. to Germany⁹, it bears alone (22).

As there are in fact different general contracts for physician services, also the number of contract physician differs. Some physicians opt to only contract with some of the insurance funds, which leads to the paradox situation that smaller but more affluent funds have more physicians under contract than the §2-funds (see the following table):

Table 2: Number of contracts with different insurance funds

	§2-funds	VAEB	BVA	SVA
GPs	3.950	4.025	4.001	4.052
Other specialists	3.044	3.353	3.393	3.407
General specialists	2.814	3.130	3.168	3.181

Source: Ärztekostenstatistik 2015

This system also leads to an unusual separation into the contracted GPs and specialists as opposed to a large and growing number of non-contracted self-employed physicians (explained in detail in section 6.3.7).

Ambulatory care: financing and payment

The fee schedules for contracted physicians are in general not based on costing data as it is done in relative value scales like TARMED or EBM, but rather on negotiated fees that are jointly increased no matter the underlying changes (41). TARMED and EBM are used in Switzerland and Germany, respectively. Both

⁹ In Germany, SHI and the Associations of SHI-contracted physicians (Kassenärztliche Vereinigungen) carry the joint responsibility to provide adequate services (§72 SGB V).

systems are based on cost calculations for each service so that compensation reflects the actual expenses and efforts by the personnel. What is more, fees differ considerably between insurance funds, as also the law (§342(2)) states that fees should be set according to the financial power of the insurance fund. This is found to set distortionary incentives for physicians when treating patients. It is also an inefficient allocation of funds, as some physicians have their practice in areas with a population dominated by insurees whose insurance fund pays low fees. This essentially means that the low fees already have to be an acceptable source of income, whereas physicians in affluent regions in this sense thus receive economic rents.

The payment mechanism for GPs is contact capitation (approx. 70% of income) with additional fees for service (30% of income). For specialists overall, this ratio is essentially reversed. For some services, insurance funds usually apply a maximum volume, beyond which they pay only a reduced or no fee. By international comparison, the Austrian payment system seems thus to be outdated, as it neither reflects actual costs and efforts incurred nor the risk-structure of patients, nor does it incorporate quality (41,42). For primary care, the changes in the course of the PHC law is supposed to bring about a change in the payment system for GPs, as the changes to the ASVG require SHI to develop a payment system that introduces a more differentiated system of capitation, case-based payments, fee for service and probably some pay-for-performance components (see the new §342b (3) ASVG introduced by the *Gesundheitsreformumsetzungsgesetz 2017*). Nevertheless, there will still be no payment mechanisms fostering integration of primary and secondary care.

The outpatient departments in hospitals are paid by a global budget based on historical values. This sets a distortionary incentive to admit patients to inpatient care, where the hospital receives DRG-points per stay. On the other hand, SHI pays for all extramural services alone, while it contributes ca. 45% in the form of a lump sum to hospital financing. This sets the incentive for SHI to restrict services that it has to pay for in full, channelling patients to outpatient departments in hospitals. This might be an explanation why despite a lot of public debate, the integration of the extramural sector with outpatient departments (envisaged in the healthcare reform of 2005) as well as out-of-hours care in the extramural sector are not well developed. Another possible reason is that any change in this setting would create additional costs during the transition. Winding down capacity of outpatient departments leaves the hospital with fixed costs for some time, while a possible transfer of funds to the extramural sector requires payment of full costs, even if they are lower than full costs inside the hospital.

*Inpatient care: structure and personnel*¹⁰

Austria has an unusually large inpatient sector and above average inpatient stays. Several factors seem to contribute to this. One is probably the fiscal illusion already mentioned, i.e. in an ageing population, it is politically beneficial to build hospitals, even more so when for the constituency, the connection to the tax burden this entices is concealed (20). Also, the payment system favours the inpatient departments (see below). Another reason might be that even publicly funded non-profit hospitals are allowed to have a so called 'Sonderklasse'. Patients in the 'Sonderklasse' are not only entitled to improved amenities, but the treating physicians also receive additional fees from the private health insurance fund usually paying the additional amenities. In turn, the hospital management claws back some of these fees for the use of the facilities in the function of a 'private' physician¹¹. In sum, there is an incentive for both the hospital management and the physicians to cater to patients in the 'Sonderklasse'. As the law (§16 KaKuG) allows for only 25% of hospital beds being 'Sonderklasse', there is an incentive to keep the overall number of beds high as well. In addition to this, the 'Sonderklasse' might also cause equity issues, as it can be assumed that patients creating additional income through their private insurance's payments, or being an actual private patient in the hospital physician's private practice, expect preferential treatment (43). What is more, it has been shown that patients with voluntary health insurance have shorter waiting times *ceteris paribus* and are in some cases offered payments order to shorten waiting times (44).

Austria also has many smaller hospitals that might not be scale efficient, while in general, there seems to be room for improvement to increase efficiency in the inpatient sector (45,46). Given this structure, more specialisation, division of tasks as well as cooperation among hospitals or between hospitals and other providers in relation to certain processes could help increase efficiency even without a fundamental structural change (47).

The personnel structure is dominated by registered nurses followed by physicians. Several professions working in hospitals in other countries do not exist, making the allocation of tasks inefficient. For example, there are no physician assistants, medical coders or phlebotomists, for which there is not even approved training (48).

¹⁰ The analysis is restricted to the publicly funded hospitals, so called fund-hospitals (Fondsspitäler) due to being financed through the State Health Funds.

¹¹ Mind though that these physicians are still employees of the publicly funded hospital.

Inpatient care: contractual arrangements

While hospitals are formally a contractual partner of SHI, the latter's role is very limited, as the contractual relationship is governed by the provisions in the 15a-agreement on organisation and financing of the healthcare system. In effect, SHI pays a portion of their income to the state health funds (Landesgesundheitsfonds), forfeiting all say in hospital matters. In the state health fund, the Land has the automatic majority in all matters hospital, although paying only about 30% of total hospital costs. Although theoretically, the federal level, contributing about 12% of total hospital costs, can withhold its contribution if a Land does not comply with rules set by the Federal Health Agency (e.g. the ÖSG or the Austrian DRG-system) (art. 45 and 46 of the 15a agreement on organization and financing of the healthcare system 2017-2021), this has never happened so far, possibly due to political considerations (19). With the healthcare reform 2013, Land, SHI and federal government are obliged to work more closely, as especially Land and SHI have a shared responsibility to reach healthcare and financial targets (Gesundheitsreformgesetz 2013). However, accountability for the healthcare targets is based on the publication of the monitoring reports by GÖG, which due to the large number of targets most likely does not receive widespread public attention. The 15a-agreement on target control (2013) introduced a sanction mechanism, which was detailed by the Gesundheitszielsteuerungsgesetz. Sections §§34-38 of this law regulate mechanisms in case targets are not reached, one of the parties is in violation of an agreement within the target control mechanism, or no agreement on target control on the Länder level is reached. In the first case, the target control commission of the Land has to submit a report to the federal target control commission as to why the targets were not reached, which is then accepted or rejected. Either way, this report is made public. If a party is in violation of the target control agreement, one of the other parties can notify the federal target control commission which then proposes a resolution. If the issue is not resolved within two months, an arbitration mechanism can be invoked. In case no agreement can be reached on the Länder level, the points of dissent are reported to the federal target control commission, which in turn publishes this report. The federal target control commission or the MoH proposes a resolution for the points of dissent.

Inpatient care: financing and payment

SHI, the federal government, the Länder and municipalities all contribute to every State Health Fund through a complicated financing arrangement that has been frequently criticized due to its intransparency and lack of needs-orientation (13,14,39). Each State Health Fund pays the hospitals within its Land, so that changes in patient flows can only be factored in whenever a new 15a-agreement is reached. The

Austrian DRG system called LKF (Leistungsorientierte Krankenanstaltenfinanzierung) is currently used for the inpatient departments only. The LKF system currently does not include quality-dependent components. It is also strictly based on the stay rather than a treatment episode (including readmissions). Through the LKF system, the State Health Fund's budget for the inpatient sector is distributed to all hospitals in the Land. However, as the federal government only requires that more than 50%¹² of costs of the hospital have to be reimbursed through LKF, every State Health Fund pays very different values per LKF-point. The remaining costs are called 'Betriebsabgang' and are thus not a true operating deficit. Each Land can, within some limits, enact different rules as to how this Betriebsabgang is covered by a block payment called 'Betriebsabgangsdeckung'. It has been argued that this mechanism creates soft budget constraints for hospitals owned by the Land while creating harder budget constraints for their private non-profit counterparts, as part of the Betriebsabgang can be attributed to the hospital owner, which is in most cases the Land again for public hospitals, but private entities, mostly religious orders, in the case of private non-profit hospitals (46). What is more, as each inpatient stay creates financial compensation, but outpatient departments are paid through a global budget, an incentive is set for the management to shift treatments to the inpatient departments, resulting in unnecessary admissions and as illustrated by the high number of cataract surgeries entailing an inpatient stay (41). In order to mitigate the problem, treatments in day clinics were incentivised, as they are paid as a full overnight stay. This measure shows some effect as the latest monitoring report shows (49), albeit with considerable differences between the Länder.

Rehabilitation

The responsibility for rehabilitation rests with all three branches of social insurance, depending on the cause for needing rehabilitation. Therefore, many social insurance carriers have rehabilitation facilities of their own. Little research has been done in the area of challenges in rehabilitation. An example is Sperl *et al.* (2011) on child rehabilitation (50). The authors stress the deficits in the area of rehabilitation of children due to a lack in appropriate facilities and show international examples on how to improve this field.

Only since 2004, there is a more detailed overview of capacities and attempts to plan those capacities in the rehabilitation plan by the HVSV and GÖG, currently in its 2016 edition. From the aims of the

¹² This requirement was included in the 15a-agreement so that hospitals belong to the private sector according to the System of National accounts, effectively removing deficits and debts in hospitals from the public sector. However, the Manual on Government Deficit and Debt laying out the rules for Maastricht conformity does no longer recognize this, so that more than 3 billion Euros had to be added to Austria's Maastricht debt in 2011.

rehabilitation plans, it becomes obvious, that Austria has far too few capacities in ambulatory rehabilitation, and inpatient rehabilitation capacities need to be adapted. Care coordination with hospitals is again hampered by split competencies.

Pharmaceuticals

In the first decade of the new millennium, pharmaceutical expenditures were a major concern for SHI, especially volume increases. Through diverse measures, most notably a reduction of VAT from twenty to ten percent, as well as introducing a system of rebates and supporting physicians to prescribe more economically, the cost increase could be curbed. However, in recent years, some expensive new drugs have again challenged SHI's pharmaceutical budgets. Also, SHI is only responsible for pharmaceuticals outside hospitals, while hospitals bear the costs of their own drugs, incentivising cost shifting. At least for high cost medications, this was attempted to be tackled by the healthcare reform 2013 by the introduction of the pharmaceutical commission (*Medikamentenkommission*) issuing recommendations on high-priced drugs. Improved procurement might be necessary in both the hospital and the extramural setting, as Austria does not perform as well as in previous years in terms of drug prices (51).

Integration of care

The split in competencies, the financing and payment mechanisms described above, detailed regulations for structures and contractual arrangements and limited funds for innovation reduce the ability of the Austrian healthcare system to provide integrated care. So far, only one DMP has been rolled out, with initial findings revealing a positive impact, however, participation in the program is low (24). This is a concern, as Austria's demographics follow the general trend in most European countries of double ageing, alongside an increase in chronic and multiple chronic diseases.

Other important fields like long term care and social care are the responsibility of municipalities and Länder, and thus, not easily integrated with health care. The joint responsibility for primary health care established in the healthcare reform 2013 still has to show concrete effects in service provision, as currently, true primary healthcare units are still rare, and for integration towards secondary care only some projects exist. Also, there are some training courses for case management, but rarely defined positions in healthcare facilities.

3 International comparative analysis

This chapter provides an international comparison of Austria's healthcare system in regard to expenditure, resources, health outcomes and utilisation.

3.1 Overview

This chapter presents an introduction to the performance of Austria's healthcare system, specifically this analysis details the country's methods of healthcare financing, its physical and human resources, its health outcomes and extent of healthcare utilisation. Healthcare financing is considered with regards to the magnitude of spending on healthcare, both at a country level and an individual level, in addition to Austria's means of financing and the corresponding contributions of different financing methods to total expenditure.

The adequacy of Austria's healthcare resources is best assessed through an analysis of the distribution of labour resources as well as physical capital, for example hospital beds. However, in order to construe an informed opinion of the performance and adequacy of Austria's healthcare system it is essential to consider the overarching dimension of health outcomes. As such this report utilises indicators in the context of life expectancy, burden of illness and unmet need.

Finally, a key objective of any healthcare system is access, hence this report will discuss healthcare utilisation in Austria to determine whether this goal is achieved and to what extent inequities present themselves within the country.

Various data sources were employed in order to create this chapter including OECD Health Statistics data 2015, the Global Burden of Disease Study 2015, Eurostat database in addition to data provided directly by GÖG. A series of figures were constructed using the available data which were then utilised to inform observations regarding the Austrian healthcare system. A comparative analysis approach was adopted, therefore throughout the chapter comparisons are drawn between Austria and other OECD countries. Given Austria employs a health insurance system, more granular comparisons were made among European OECD countries also operating health insurance systems such as Germany, France, Netherlands, Switzerland, Luxembourg and Belgium.

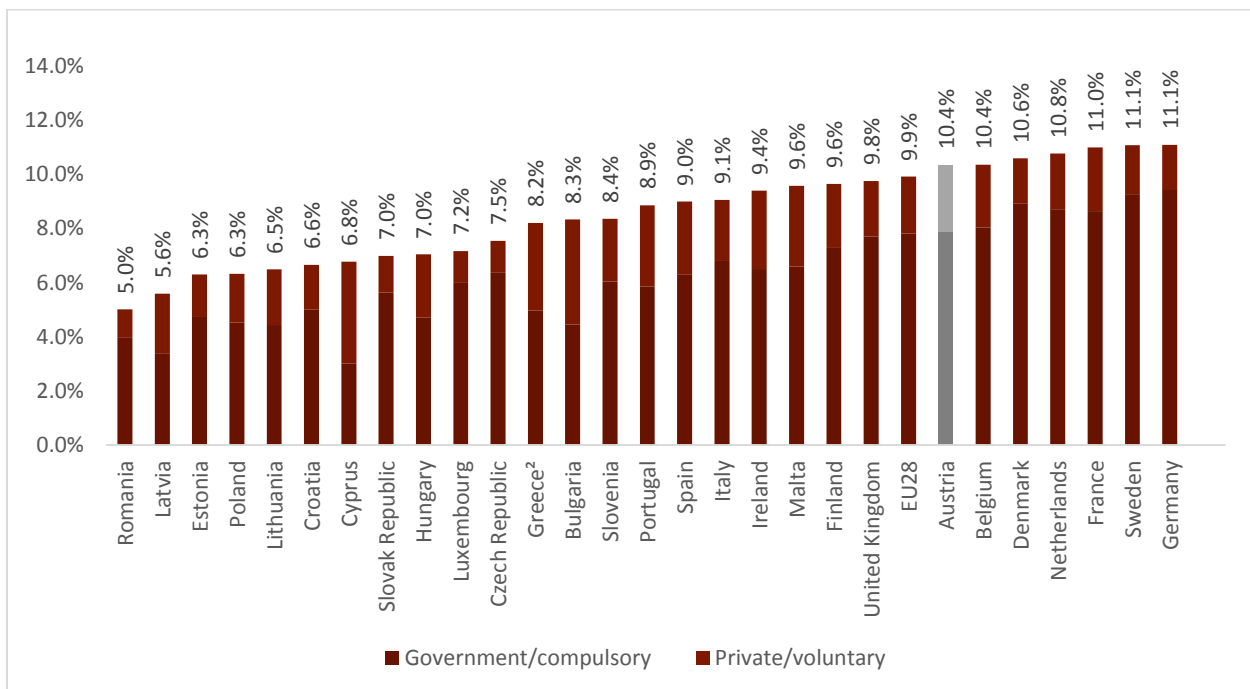
3.2 Healthcare financing

3.2.1 Health expenditure as a proportion of GDP

Compared with other European countries, Austria's health expenditure represents a relatively large proportion of GDP. Specifically, Austria spends 10.4% of its GDP on health, which is 0.5 percentage points above the EU(28) average, however, lower than in countries such as Germany (11.1%) and France (11%) (see Figure 6).

Austria's health expenditure is comprised mostly of public financing arrangements through government spending and compulsory health insurance (7.9%) and to a lesser extent, private sources and voluntary health insurance (2.5%); the larger proportion attributed to government/compulsory financing is broadly mirrored among other European countries.

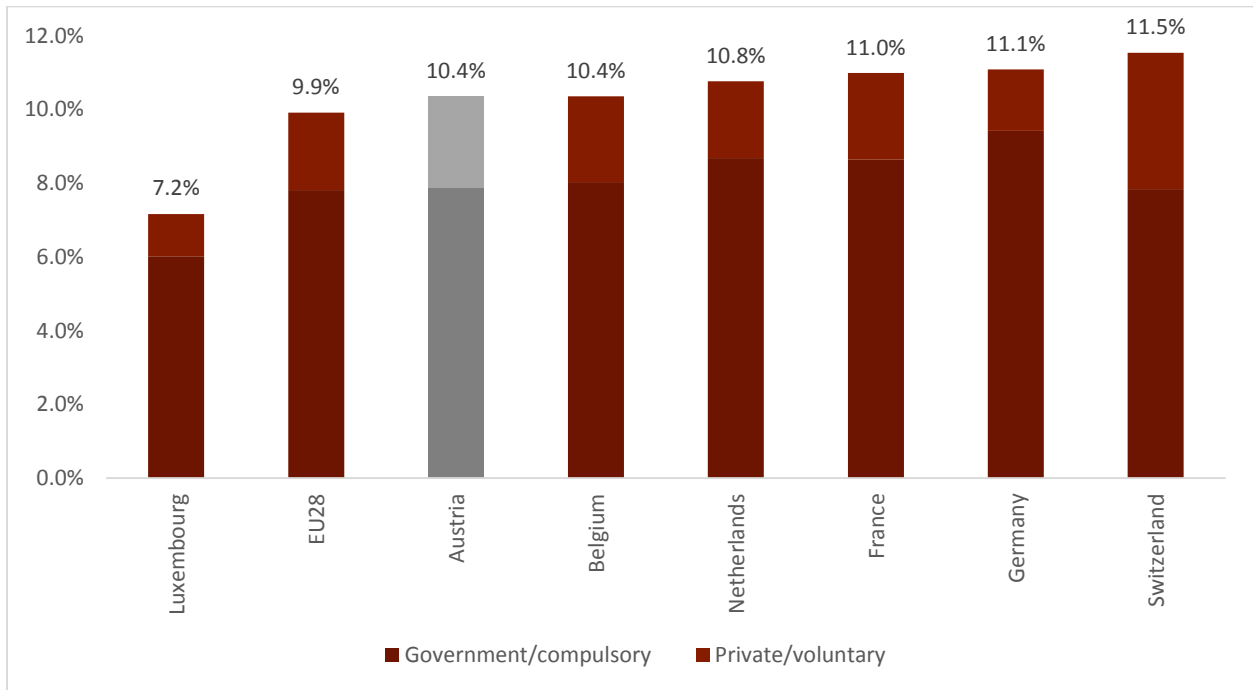
Figure 6: Health expenditure as a proportion of GDP (Europe) (2015)



Source: (52)

Regarding European countries, which are also characterised by a health insurance system, health expenditure as a proportion of GDP in Austria is comparable to other entities and is equal to that in Belgium, as depicted in the figure below. This subset of countries appear to spend a relatively higher proportion of GDP on health than other OECD countries which do not operate a social insurance system.

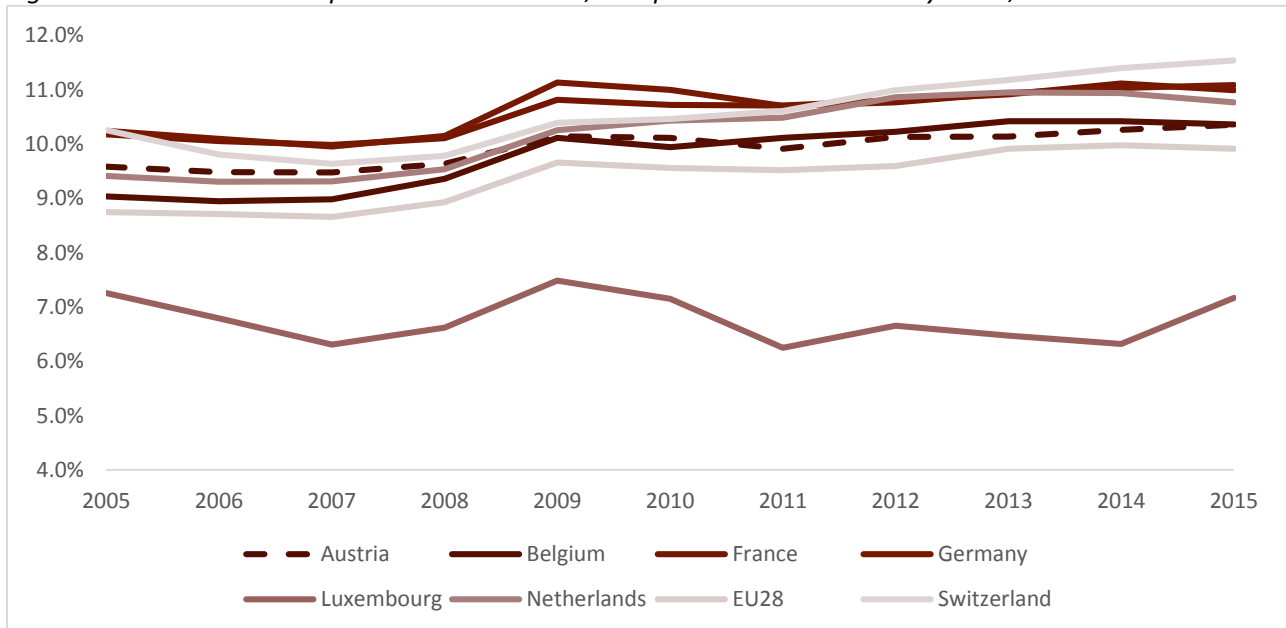
Figure 7: Health expenditure as a proportion of GDP (European social insurance systems) (2015)



Source: (52)

Health expenditure as a proportion of GDP has experienced an upward trend in Austria, albeit increases have been small. Similar to other European countries, the sharpest increase occurred between 2008 and 2009 (see Figure 8). This trend can be attributed to the fall in GDP caused by the Global Financial Crisis.

Figure 8: Trend in health expenditure as a % GDP, European social insurance systems, 2015

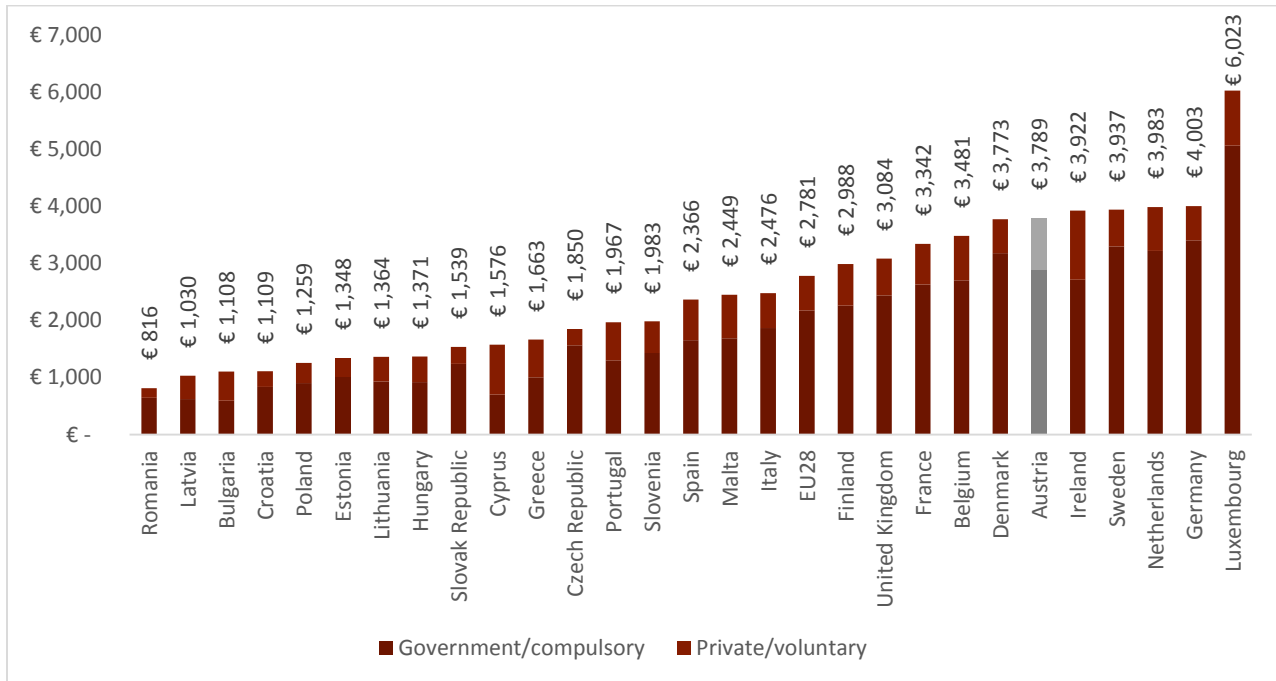


Source: (52)

3.2.2 Health expenditure per capita

An international comparison of health expenditure per capita demonstrates that Austria performs well with respect to the extent of resources spent on healthcare. Figure 9 illustrates that Austria’s health expenditure per capita of €3,789 is the 6th largest among the 28 European countries used for comparison. As discussed above, this amount is comprised largely of government/compulsory spending which amounts to €2,884 per capita and is supplemented by private/voluntary spending of €905. The mean health expenditure per capita among European countries with health insurance systems is €3,621, therefore Austria’s health expenditure per capita is above average compared to the countries shown in Figure 9. However, the average is heavily influenced by Luxembourg, which has an expenditure per capita 66% above the average (i.e. €6,023).

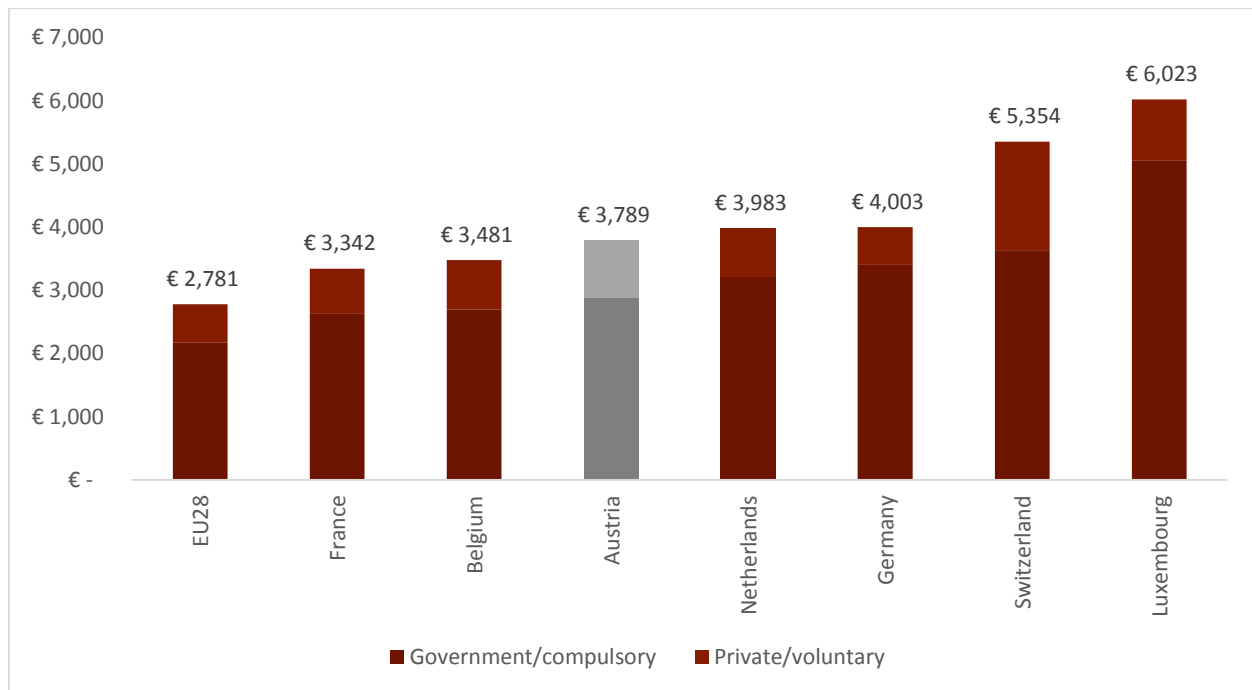
Figure 9: Health expenditure per capita (OECD) (2015 or nearest year) (€ PPP*)



Source: (52)

Note: *PPP=purchasing power parity.

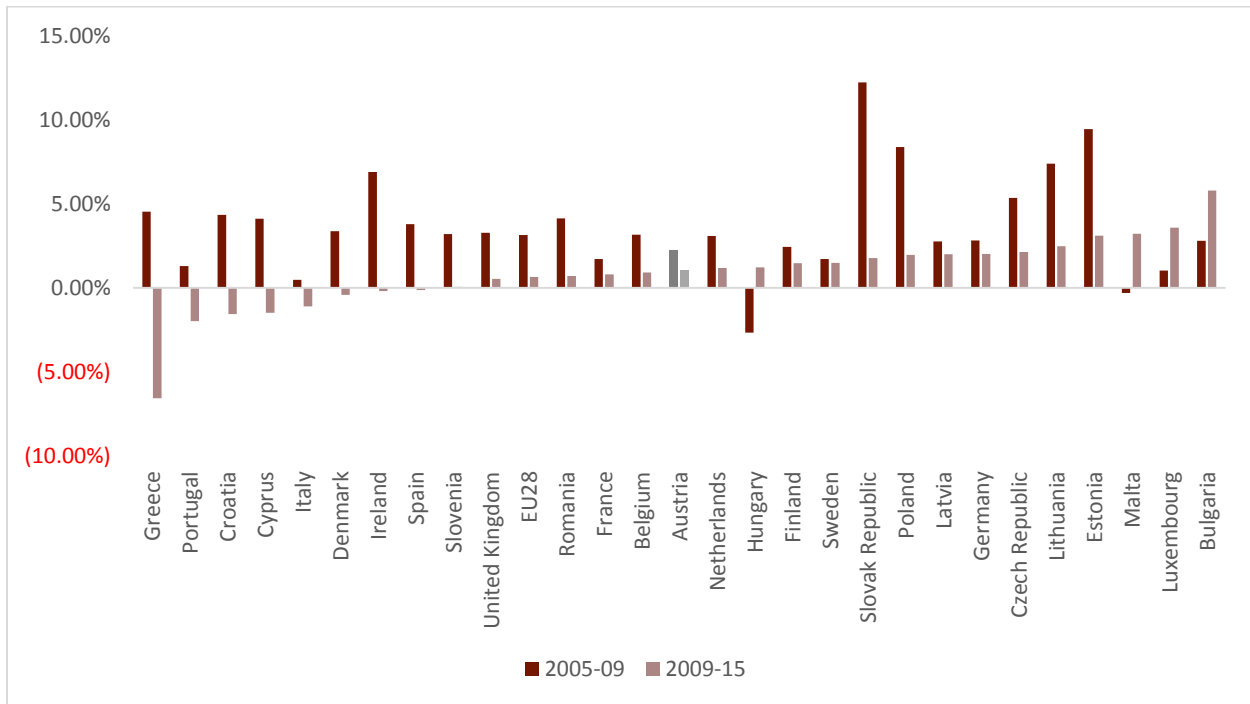
Figure 10: Health expenditure per capita (European social insurance systems) (2015 or nearest year) (€ PPP)



Source: (52)

Austria's average annual growth rate in per capita health expenditure declined from 2.23% (2005-09) to 1.06% (2009-15). This trend can be seen globally as a decline in the average annual growth rate also occurred in 24 other European countries. The difference in growth rates across the two time periods examined however was smaller than many other European countries.

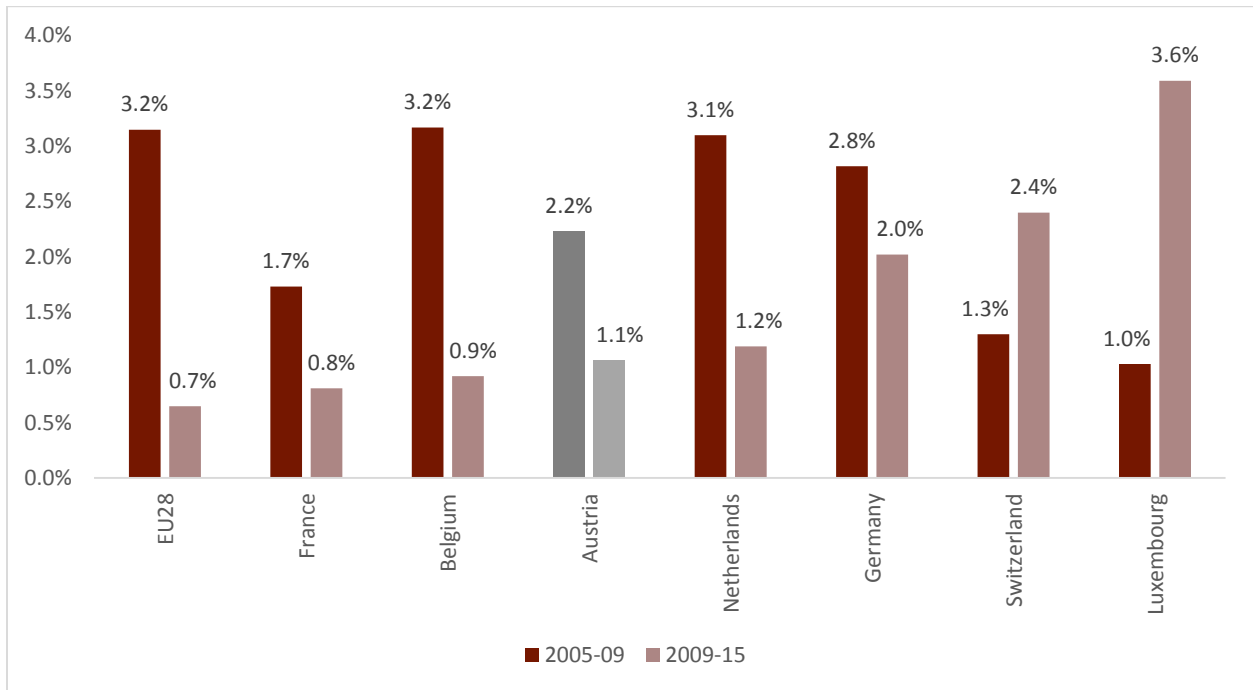
Figure 11: Average annual growth rate in per capita health expenditure (real terms) (2005-2015 or nearest year) (OECD)



Source: (52)

Austria’s average annual growth rate between 2005 and 2009 (2.2%) was greater than in Luxembourg, Switzerland and France, which had growth rates of 1.0%, 1.3% and 1.7%, respectively. Conversely, its annual growth rate was significantly lower than other European countries with health insurance systems, including Belgium which grew by 3.2%. Austria’s average annual growth rate was lower between 2009 and 2015 at 1.1%, which is in stark contrast to Switzerland and Luxembourg whose growth rates for that period were 2.4% and 3.6%, respectively. Austria’s average annual growth rate from 2009-2015 however was still 0.4 percentage points higher than the lowest average rate for the group (i.e. EU(28) at 0.7%) (see the figure below).

Figure 12: Average annual growth rate in per capita health expenditure (real terms) (2005-2015 or nearest year) (European social insurance systems)

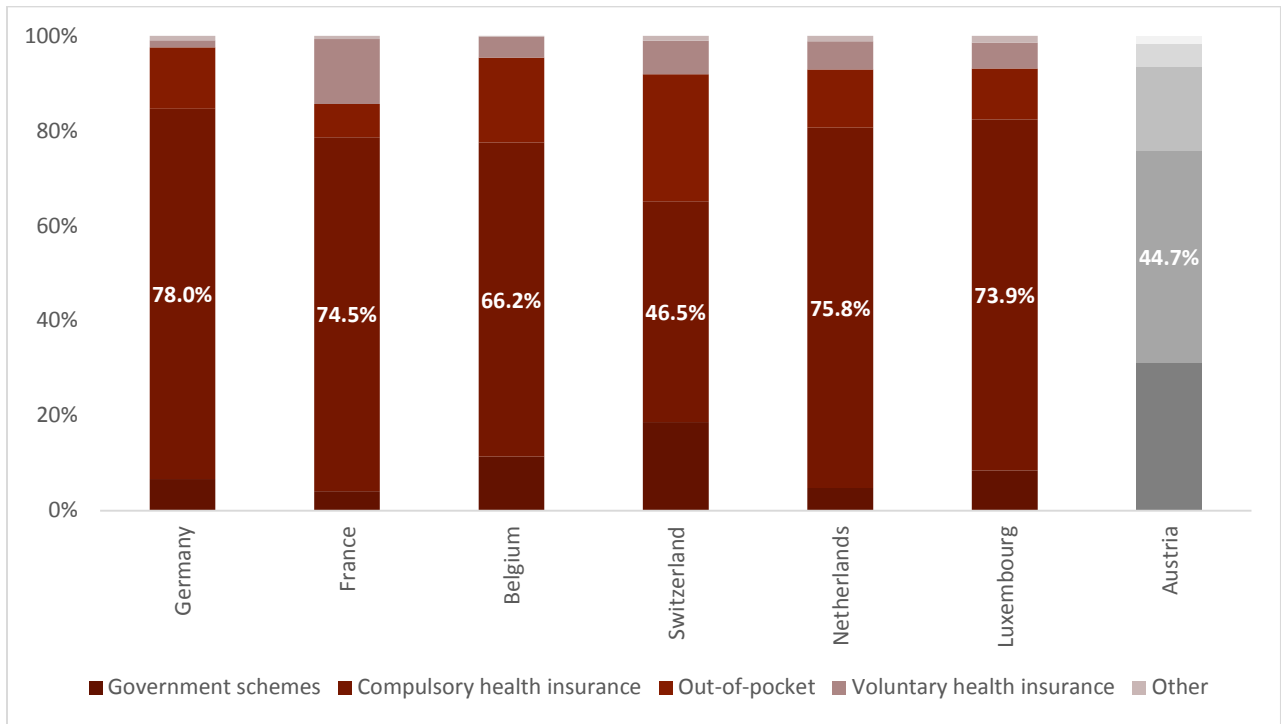


Source: (52)

3.2.3 Composition of financing

The composition of healthcare financing in Austria correlates with a general trend that the majority of expenditure in European countries with social insurance systems is comprised of compulsory health insurance (CHI) (see the figure below). Approximately 45% of health expenditure in Austria is attributed to CHI, followed by government schemes (31.1%). However, despite CHI acting as the primary source of funding, compared to other European countries operating health insurance systems, Austria funds a relatively lower proportion of its health expenditure through this mechanism. Its financing structure is most closely aligned to that of Switzerland, however, out of pocket spending in Austria is markedly less at 17.7% of health expenditure compared to 26.7% in Switzerland. This figures emphasises the importance of government schemes instead of user charges to make up funding shortfalls.

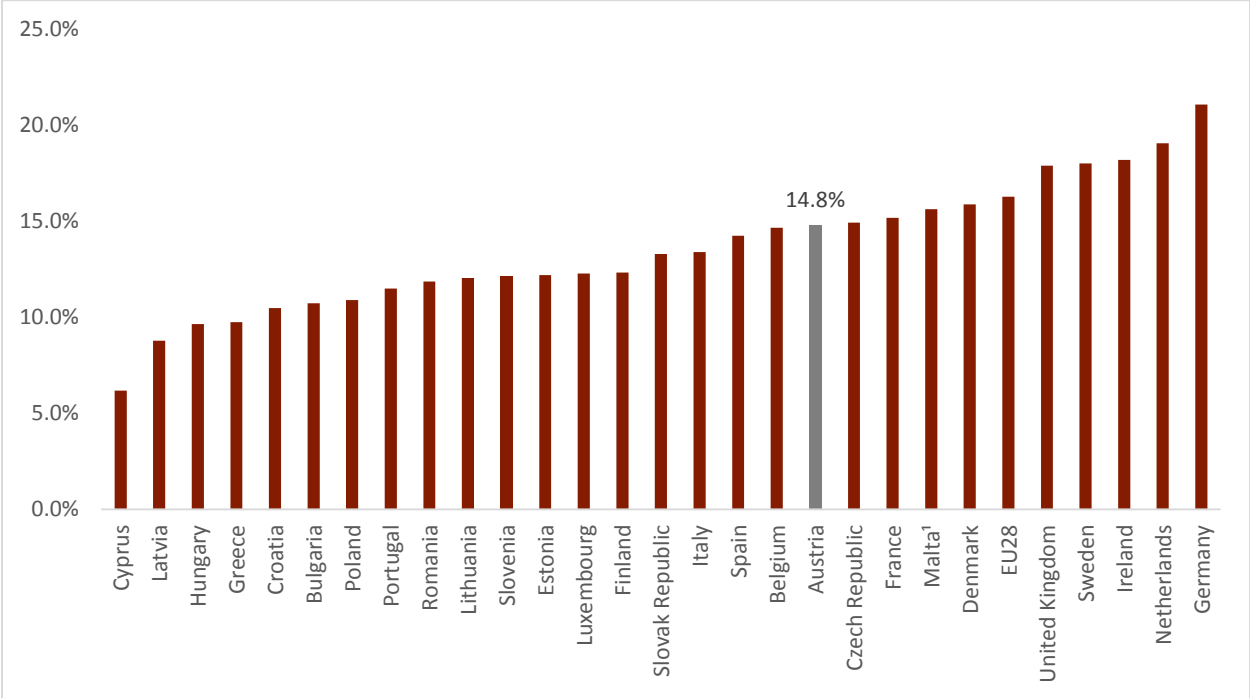
Figure 13: Current health expenditure by financing type (2014) (European social insurance systems)



Source: (52)

Government/compulsory insurance spending as a percentage of total government expenditure in Austria is 14.8%. This is 6.3 percentage points lower Germany which has the highest proportion amongst countries depicted in the figure below.

Figure 14: Government/compulsory insurance spending as % total government expenditure (European social insurance systems)



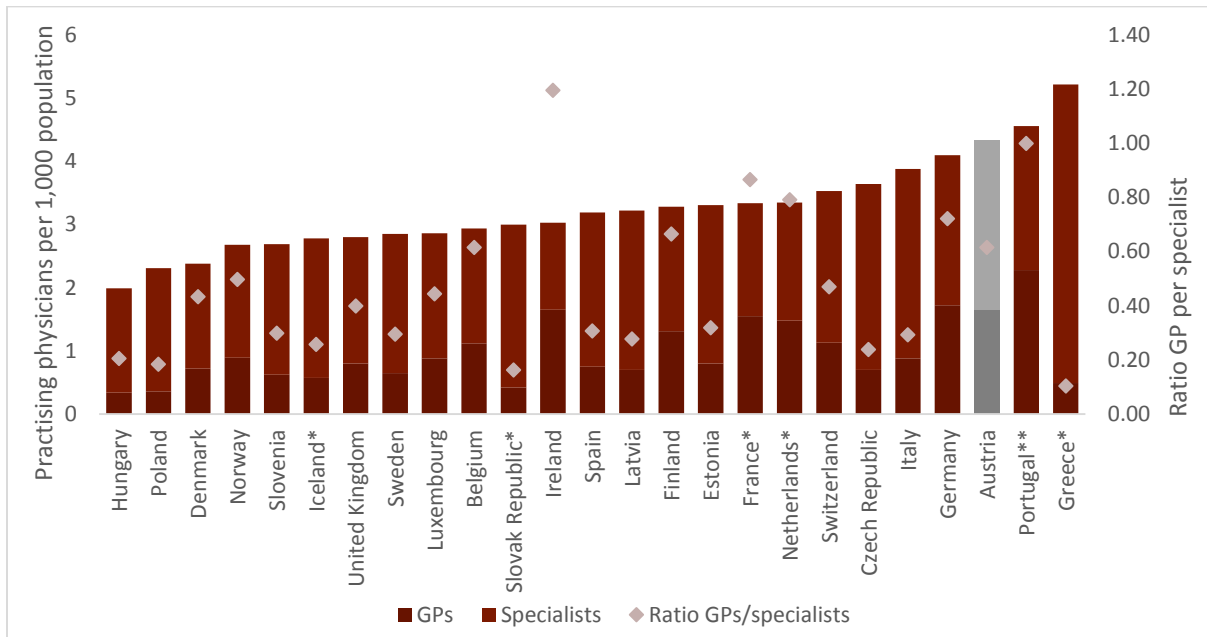
Source: (52)

3.3 Physical and human resources

3.3.1 Labour

The density of human resources in Austria varies according to the profession in question. An analysis of relevant data reveals that within hospitals, Austria is heavily reliant on physicians. Specifically, Austria has 4.33 practising physicians per 1,000 people, which is only surpassed by Portugal and Greece.

Figure 15: Practising physicians per 1,000 population in 2014 (or latest year available (a))



(a) Latest available year: BE: 2013, DK: 2007, SE: 2013, UK: 2013

(*) Includes physicians working as health care managers, educators, researchers, etc.

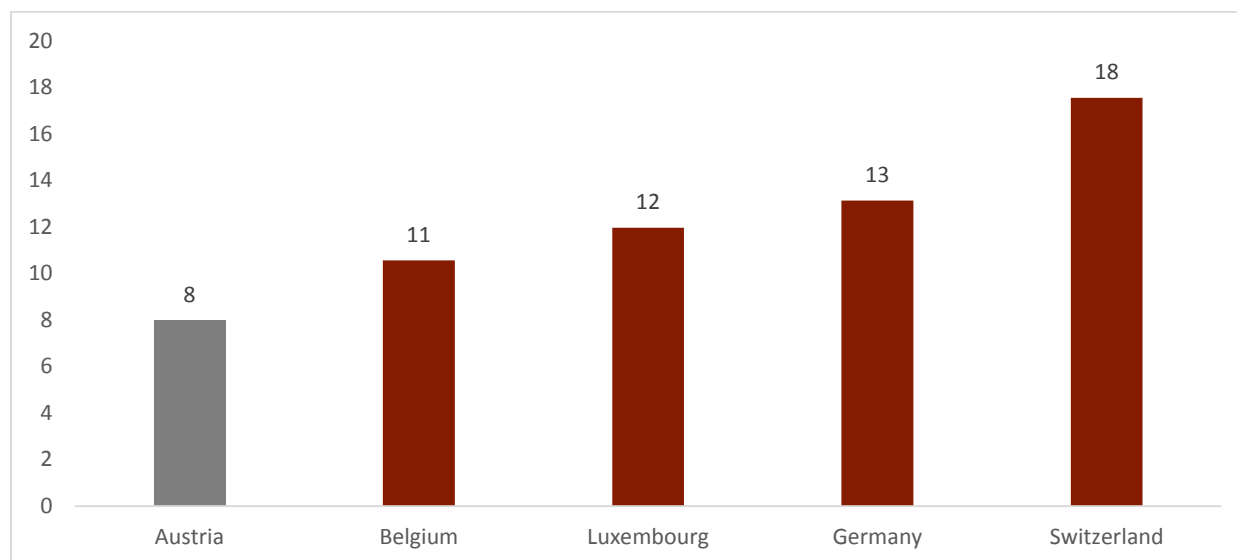
(**) Includes all physicians licensed to practice

Source: (52)

Compared to countries operated health insurance systems in Europe, it is evident that Germany, France, Belgium, Luxembourg and Switzerland all function with less practising physicians, however a noteworthy observation is the significant imbalance of labour resources evident in Austria as it also has the lowest density of practising nurses compared to the same countries (although no data was available for France). Specifically, there are only eight nurses per 1,000 people, which is significantly lower than Switzerland, the country with the highest density, which has 18 nurses per 1,000 people (see Figure 16).

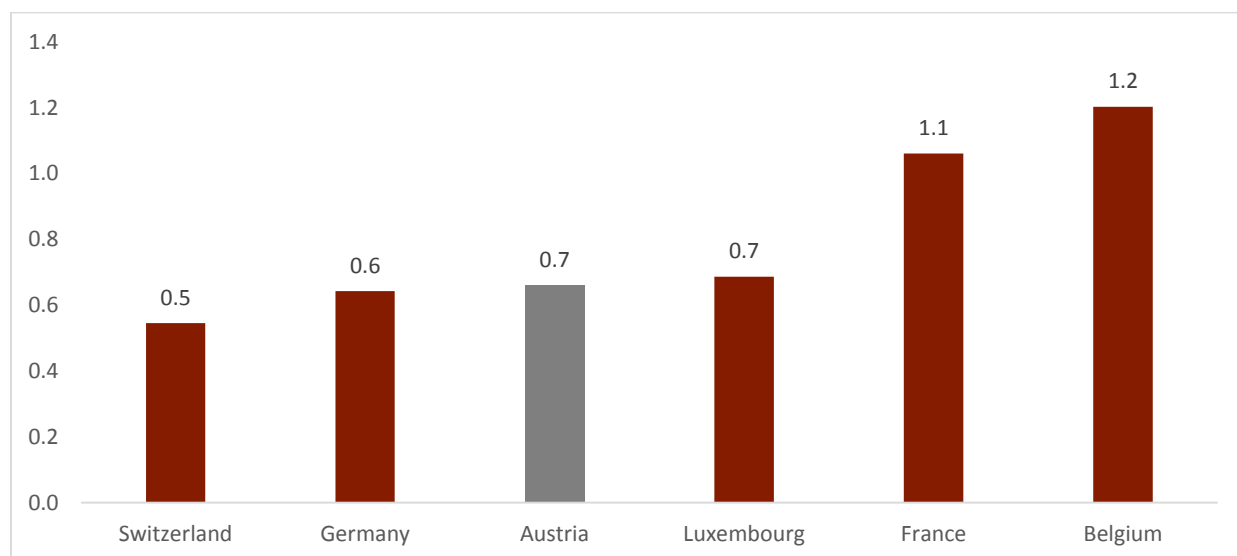
This suggests a strong dependence on physicians within the healthcare system. With respect to pharmacists, Austria has a moderate density which can be considered somewhat typical of European countries with social insurance systems. There are 0.7 dispensing pharmacists per 1,000 people in Austria which places the country just below the mean density for the basket of countries used for comparison in Figure 17.

Figure 16: Practising nurses per 1,000 people (2015 or nearest year) (European social insurance systems)



Source: (52)

Figure 17: Practising pharmacists per 1,000 people (2015 or nearest year) (European social insurance systems)



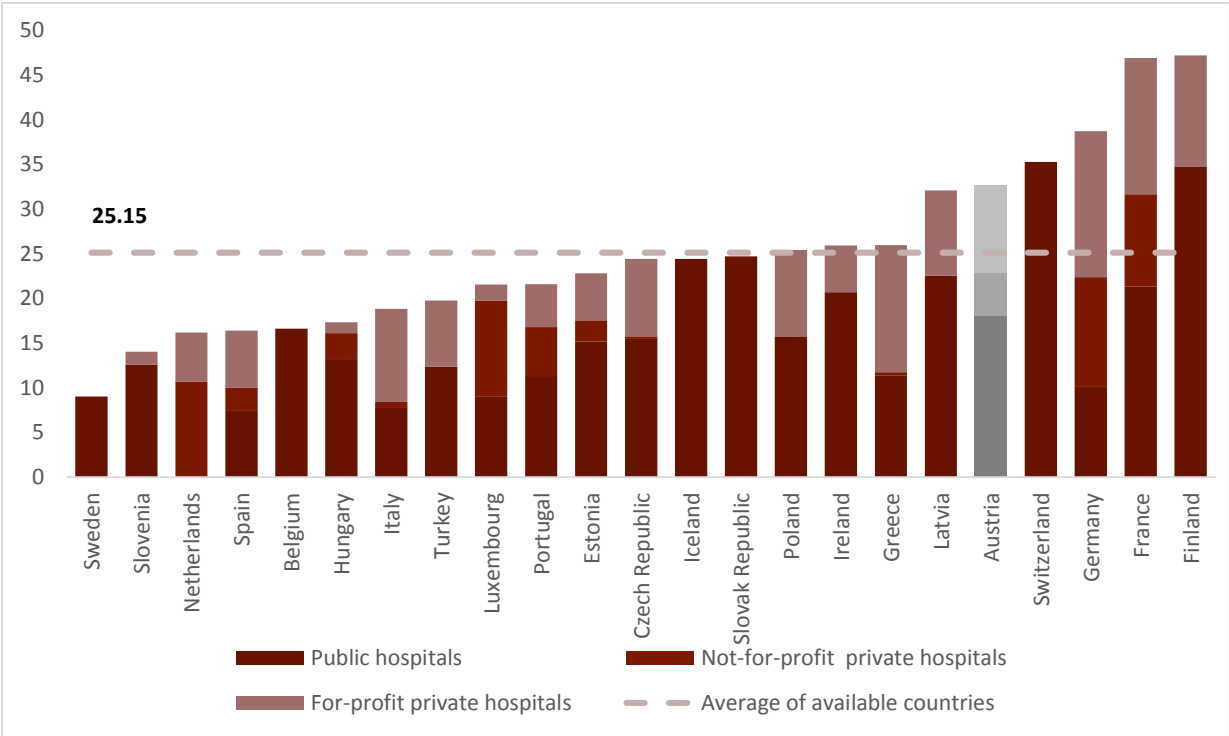
Source: (52)

3.3.2 Capital

The Austrian health care system relies heavily on secondary care, which is reflected by high resource utilisation in the hospital sector compared to other European countries. Austria has the fifth highest number of hospitals, see Figure 18, and the second highest number of hospital beds per capita in Europe (see Figure 19). In 2014, 7.59 beds were available per 1,000 Austrian inhabitants, which is almost 1.5 times

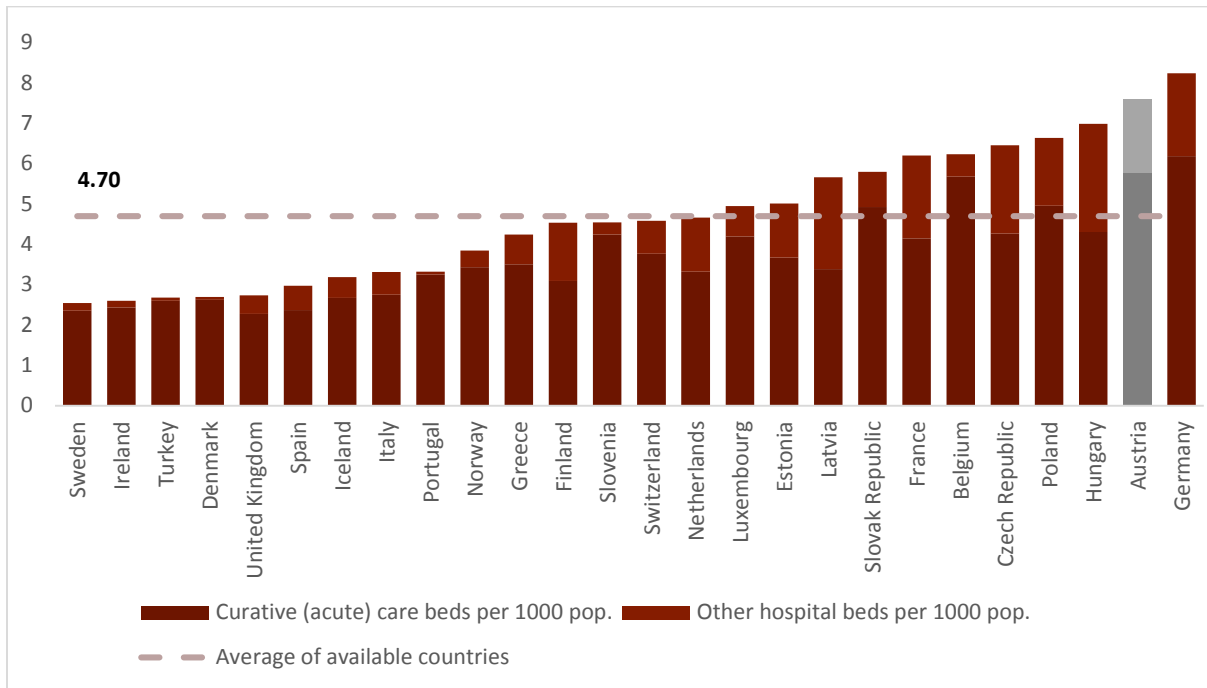
higher than the average of the 28 Member States of the European Union (EU). Over the last ten years this number has on average decreased by 12% in the EU, but only by 2% in Austria (see Figure 20).

Figure 18: Number of hospitals per million population in 2014 (or latest available year (a))



Note: (a) Latest available year: HU: 2011, IR: 2012, IT: 2013, PL: 2011, PT: estimate for 2014.
 Source: (52)

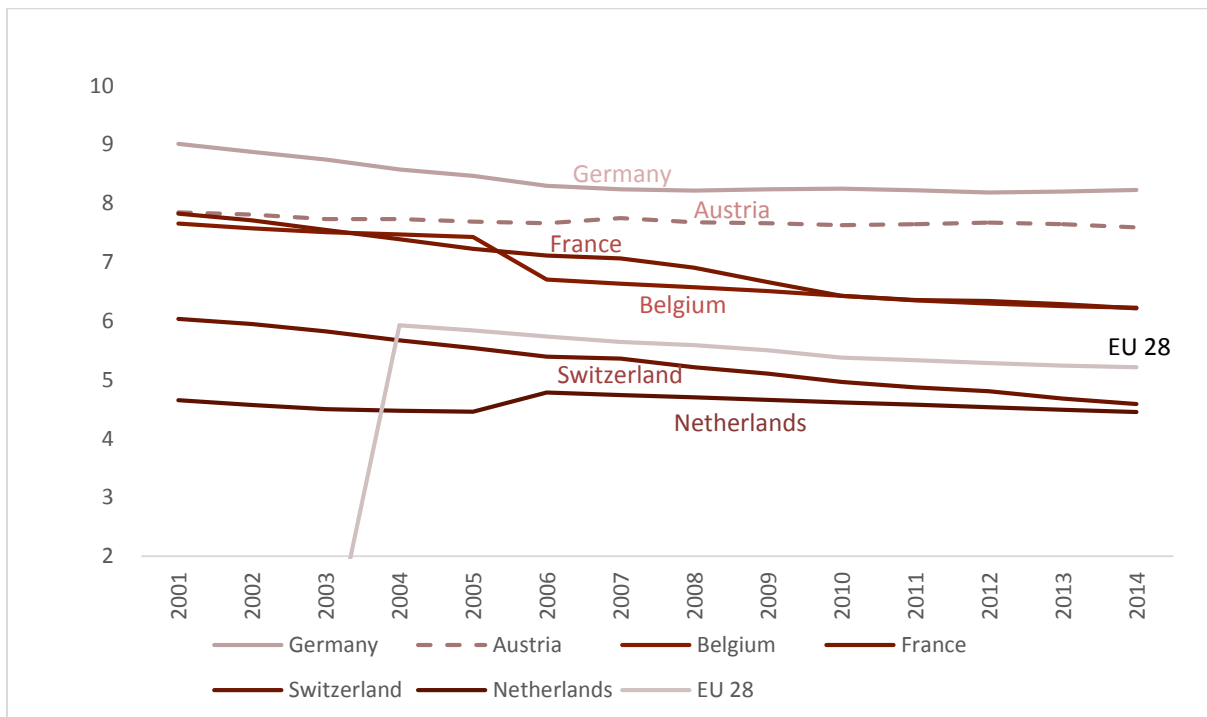
Figure 19: Number of hospital beds per 1,000 population in 2014 (or latest available year (a))



(a) Latest available year: IT: 2013, NL: 2009 (2012 for curative care beds)

Source: (52)

Figure 20: Number of hospital beds per 1,000 population 2001 – 2014 for selected countries



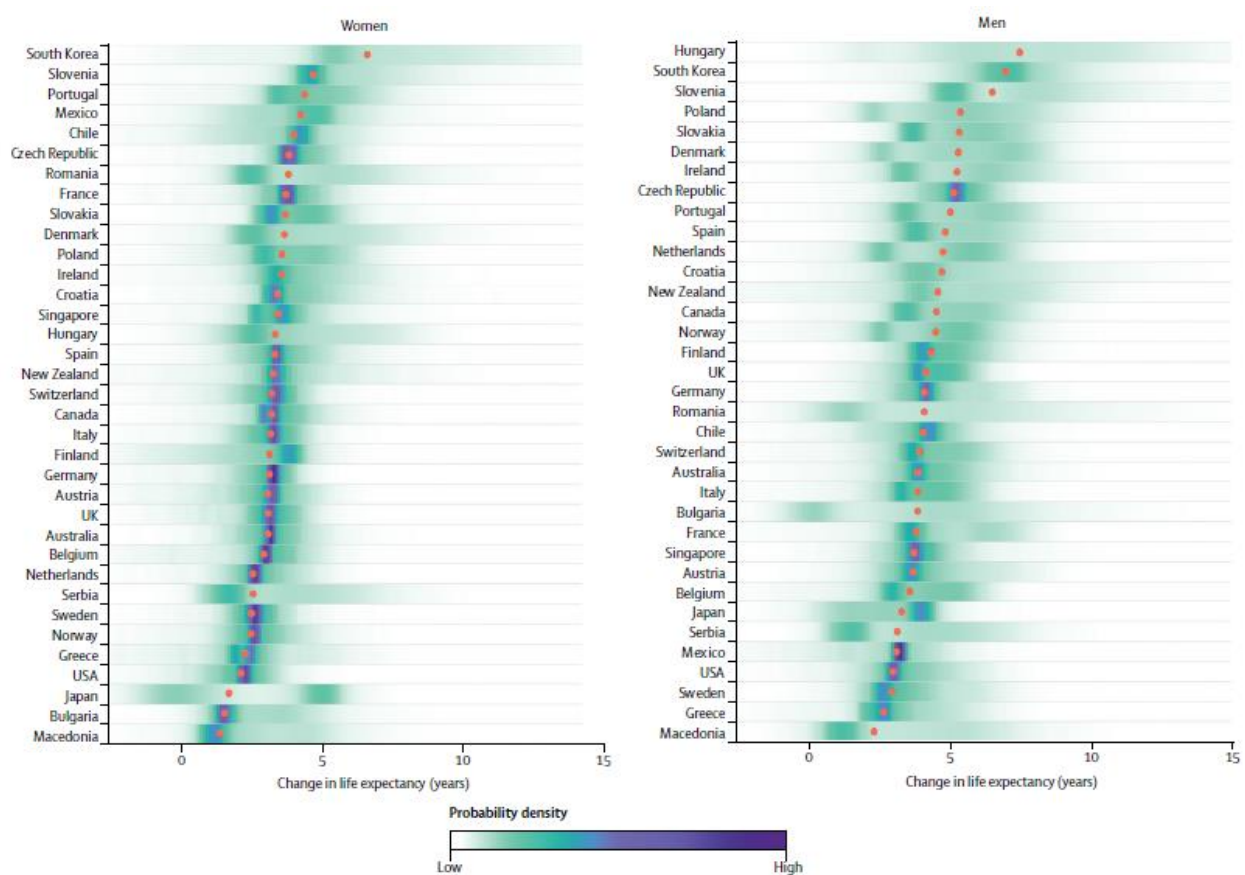
Source: (53)

3.4 Health outcomes

3.4.1 Life expectancy

The 2015 Global Burden of Disease Study identified that life expectancy for males was 78.8 years, and 83.7 years for females in Austria (see figures below). This is a marked increase from 1990 where life expectancy for males and females was 72.3 and 78.8, respectively. A study conducted by Kontis *et al.* (2017), which aimed to forecast national life expectancies, found that Austria was in the bottom half of the 35 countries¹³ analysed in regard to the median projected change in life expectancy at birth from 2010 to 2030 (men and women) (54). The median projected change for women and men was 3.25 and 3.75 years, respectively (see Figure 21).

Figure 21: Projected life expectancy between 2010 and 2030 (men and women)

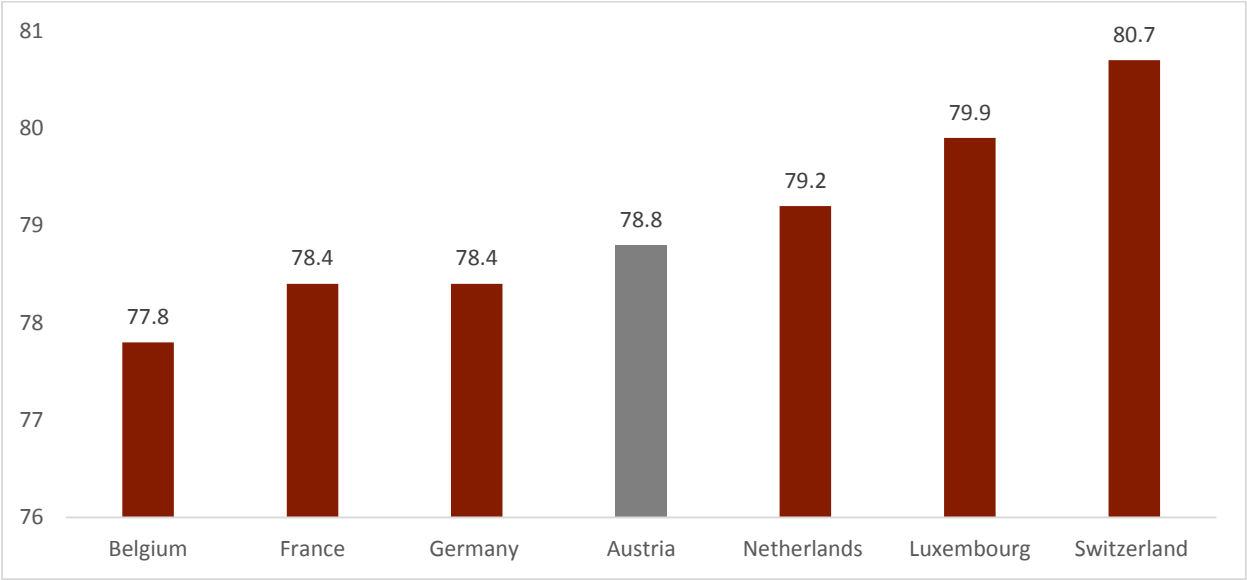


Source: Graph taken directly from (54)

¹³ Including countries such as Belgium, Germany, France, Switzerland and the Netherlands.

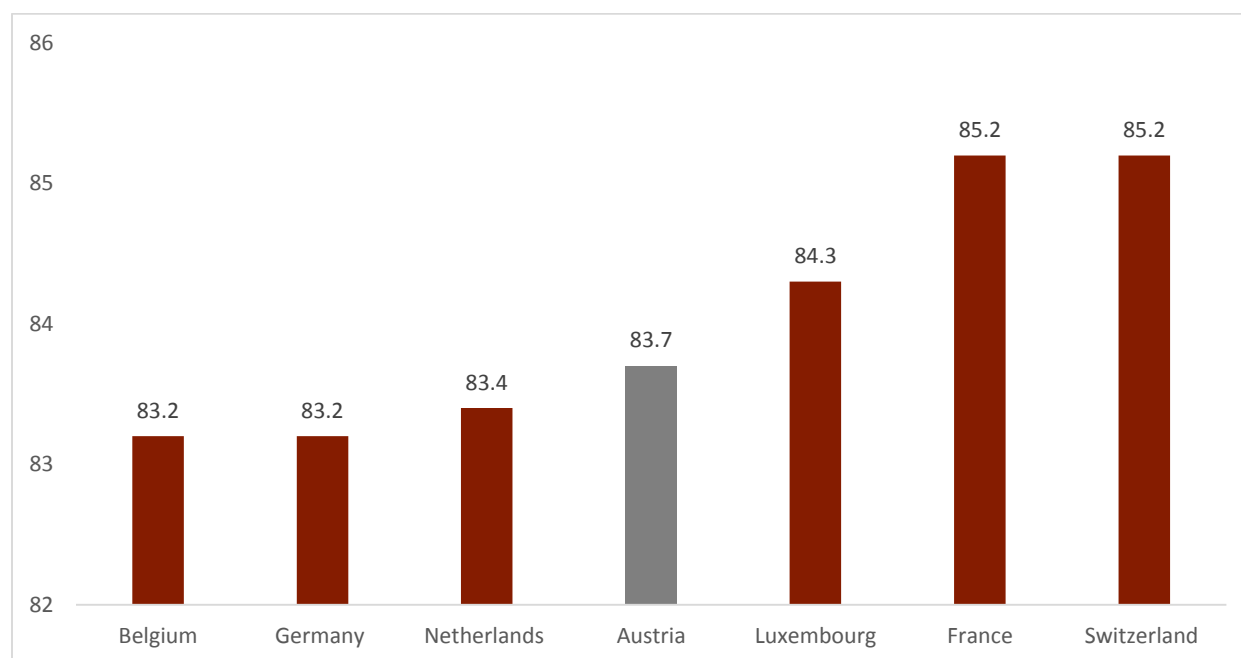
The projected female-male difference in 2030 was significantly less than that in 2010, a trend observed in almost all countries examined, indicating gender inequalities are expected to narrow. Both Kontis *et al.* (2017) and the OECD indicate that Austria lags significantly behind Switzerland and France with regards to overall life expectancy, both of which are highly comparable countries to Austria due to their health insurance systems (54). Nonetheless, the Austrian life expectancy exceeds that of Germany and Belgium, albeit only marginally. Analysing male and female life expectancies separately shows that Austria is placed in the middle of European countries with social insurance systems for both cases. For both genders Austria is bettered by Switzerland and Luxembourg.

Figure 22: Male life expectancy (European social insurance systems) (2015)



Source: (55)

Figure 23: Female life expectancy (European social insurance systems) (2015)



Source: (55)

3.4.2 Burden of illness

The top 10 causes of death in 2015 in Austria were: ischaemic heart disease, Alzheimer disease, cerebrovascular disease, lung cancer, COPD (chronic obstructive pulmonary disease), colorectal cancer, chronic kidney disease, diabetes, hypertensive heart disease and breast cancer. All of the aforementioned causes of death are non-communicable diseases, eight of which rank within the top 10 causes of premature death, in addition to self-harm and pancreatic cancer (see Figure 25). Notably, there has been a significant reduction since 2005 in the number of premature deaths caused by road injuries. The number of years of life lost (YLL) attributed to ischaemic heart disease is the highest among the top 10 causes of premature mortality in the majority of OECD countries, but is especially high in Austria as well as Germany. With respect to morbidity, low back and neck pain was ranked as the biggest cause of disability in both 2005 and 2015. The biggest risk factor which drives the most death and disability combined is diet, closely followed by high systolic blood pressure, however tobacco smoke and alcohol and drug use are also prominent. Collectively these risk factors implicate that unhealthy lifestyles play a significant role in Austria's burden of illness. The most prevalent health problem in both 2005 and 2015 was oral disorders.

Figure 24: Top 10 causes of death by rate in 2015 and percent change, 2005-2015

Disease	2005 ranking	2015 ranking	Percentage change
Ischaemic heart disease	1	1	-2.3%
Alzheimer disease	3	2	20.2%
Cerebrovascular disease	2	3	-11.5%
Lung cancer	4	4	9.1%
COPD	5	5	5.1%
Colorectal cancer	4	6	-42.8%
Chronic kidney disease	12	7	50.6%
Diabetes	7	8	-4.4%
Hypertensive heart disease	11	9	42.5%
Breast cancer	9	10	5.1%

Source: (55)

Figure 25: Leading causes of premature death (YLLs) in 2015 and percent change, 2005-2015

Disease	2005 ranking	2015 ranking	Percentage change
Ischaemic heart disease	1	1	-11.5%
Lung cancer	2	2	2.4%

Disease	2005 ranking	2015 ranking	Percentage change
Cerebrovascular disease	3	3	-19.6%
Alzheimer disease	5	4	12.7%
Self-harm	4	5	-14.5%
COPD	7	6	-0.2%
Colorectal cancer	6	7	-6.6%
Breast cancer	9	8	-2.6%
Diabetes	10	9	-14.1%
Pancreatic cancer	12	10	11.5%

Source: (55)

Compared to other OECD countries there are definite similarities in the burden of illness. In Germany, Switzerland, France, Luxembourg and Belgium, the number one cause of death and premature death in 2015 was also ischaemic heart disease. Unhealthy lifestyles contribute significantly to the burden of disease and the number of Disability Adjusted Life Years (DALYs) in the aforementioned countries. Tobacco smoke, dietary risks, alcohol and drug use and high systolic blood pressure comprise the top four risk factors in all of Austria, Luxembourg, France and Belgium. Alcohol and drug use is less of a risk factor in Germany however.

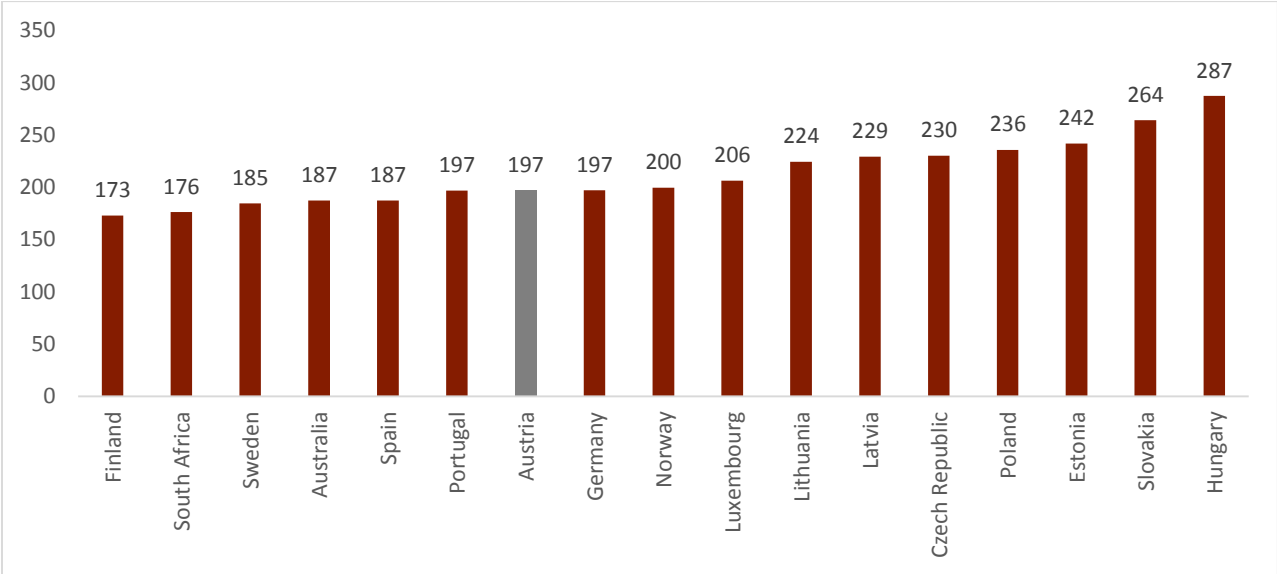
Austria performs relatively well according to the indicator of deaths from cancer per 100,000 people. Specifically, in 2015 there were 197 deaths from cancer per 100,000 people, which aligns exactly with Germany and is considerably better than the worst performer of the group in the figure below. On the other hand, it is possible to determine there is scope for improvement as several countries performed better, achieving a lower number of deaths; in particular Finland had only 173 deaths per 100,000 people.

Austria performed particularly well with regards to survival for stomach cancer, achieving a 33.1% age standardised net survival rate which was only surpassed by Belgium (33.4%) when comparing the countries included in Figure 27. Austria also has the highest age standardised net survival rate for lung

cancer, 17.9%, compared to fellow OECD countries, despite tobacco smoke being the third leading risk factor driving death and disability combined according to the Global Burden of Disease study. It is higher than the worst performer in the group, the UK, by 8.3 percentage points.

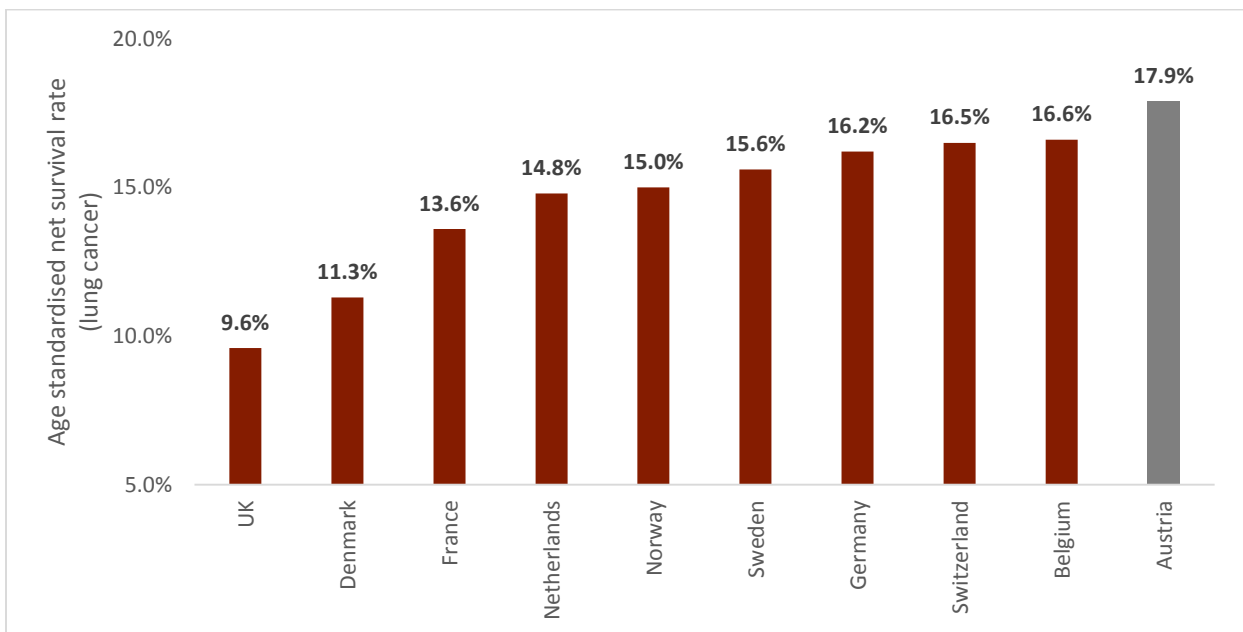
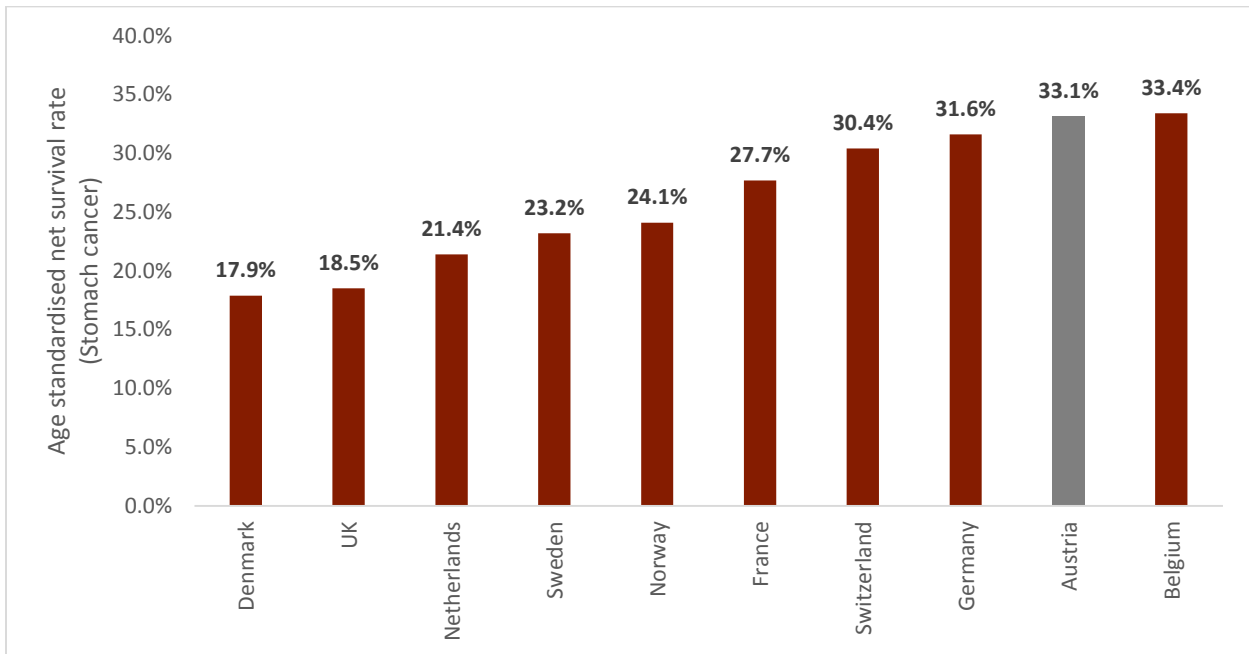
Despite generally performing well against cancer metrics which act as indicators of overall health care performance, one anomaly exists. The age standardised net survival rate for leukaemia within adults is only 45.8% which is lower than many European countries including those also operating social insurance systems such as Belgium, France, Switzerland and Germany. More than half of adults diagnosed with leukaemia in these countries survive the disease, whereas less than half survive the disease in Austria.

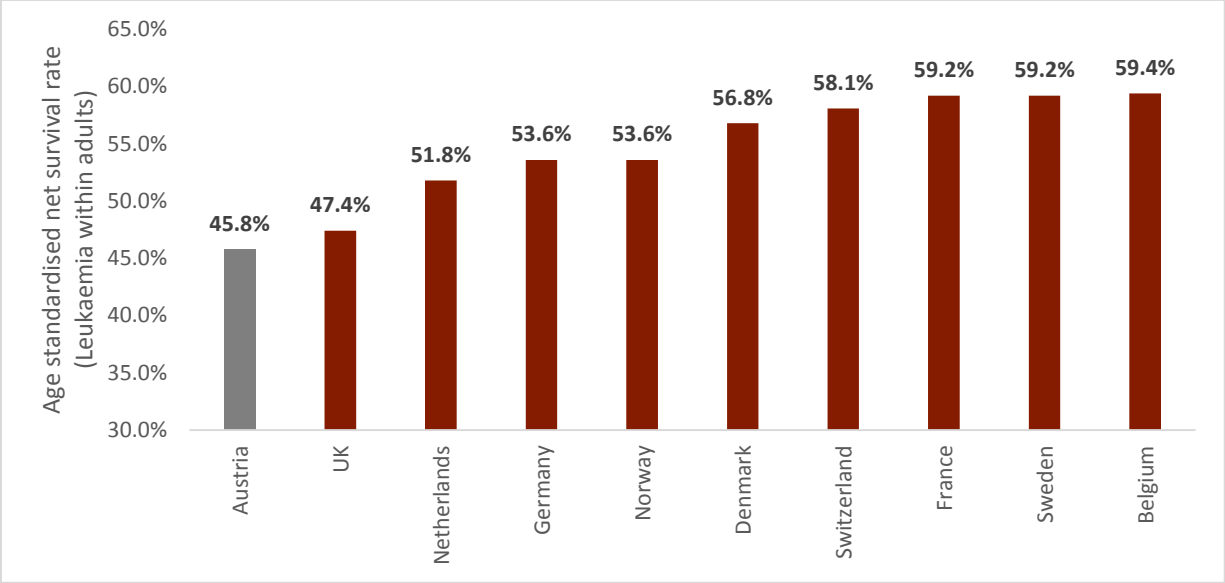
Figure 26: Deaths from cancer per 100,000 people (2015)



Source: (52)

Figure 27: Cancer survival rate (various types)

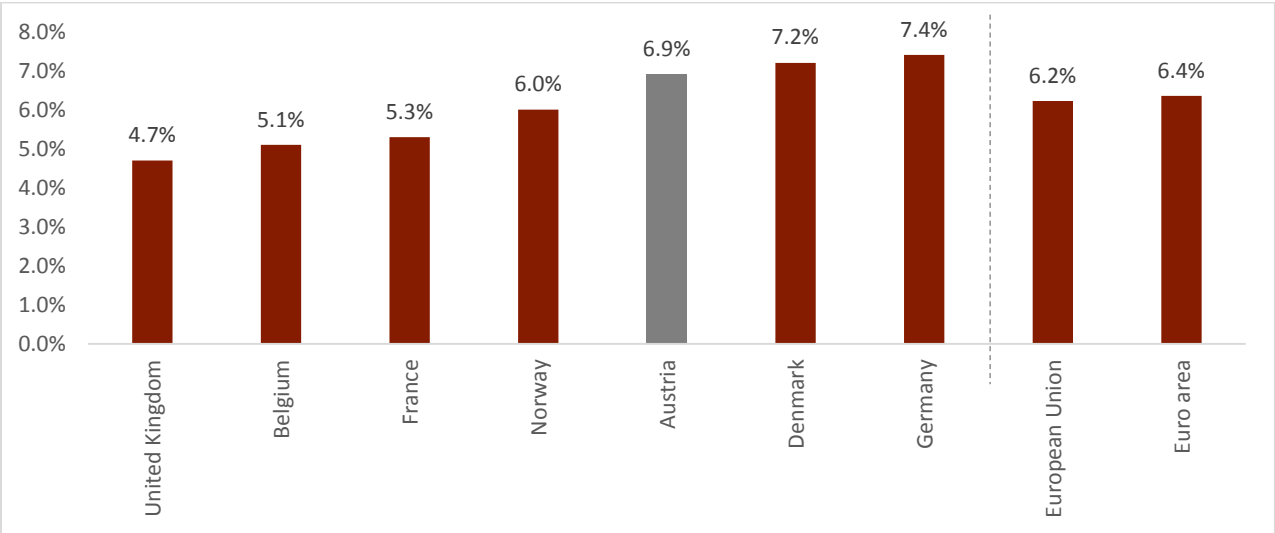




Source: (56)

The prevalence of diabetes in Austria is relatively high at 0.7 percentage points above the average for the European Union and 2.2 percentage points higher than the country with the lowest prevalence, the UK (see Figure 28). This indicates that the impact of this disease on public health in Austria is of significance. Furthermore, diabetes is associated with unhealthy lifestyles thus reiterating that population health in Austria suffers due to risk factors such as diet and high body-mass index. Primary care is important for the management and prevention of diabetes therefore the above average prevalence once again points to weaknesses within Austria’s primary care system.

Figure 28: Prevalence of diabetes (20-79 years) (2015)



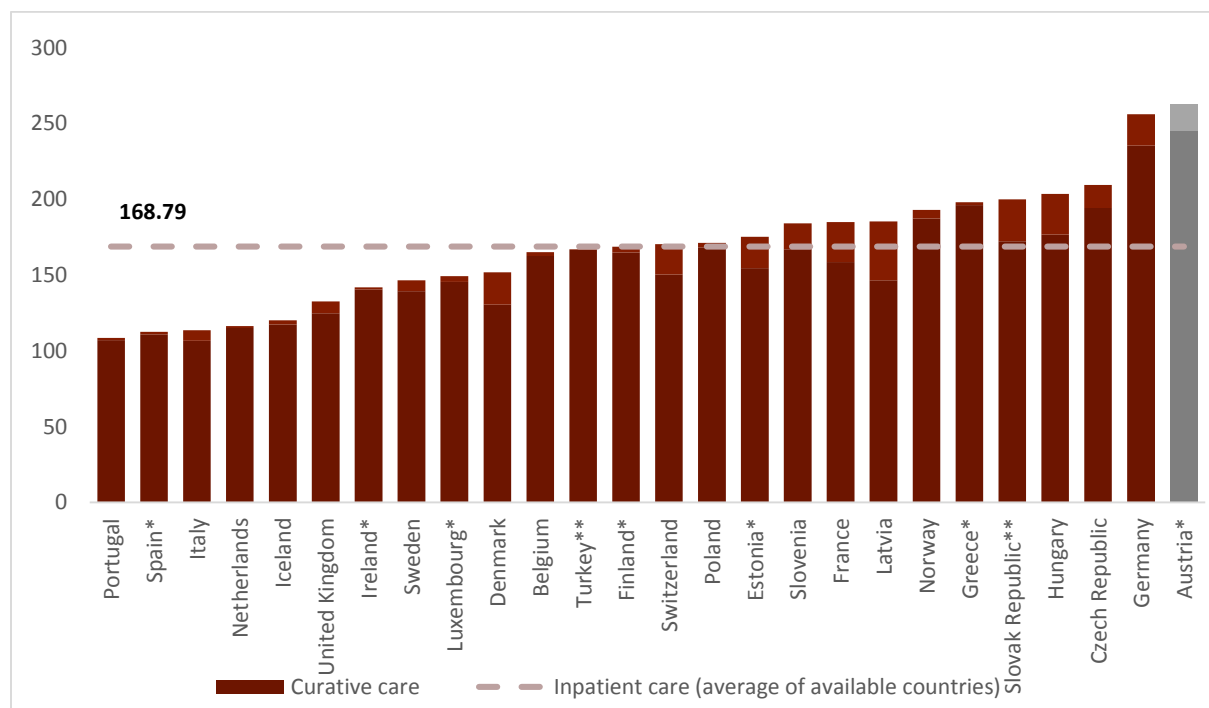
Source: (57)

3.5 Healthcare utilisation

3.5.1 Overall healthcare utilisation

The utilisation of the hospital sector can best be described by the discharge rates from inpatient hospital stays, that is, the number of patients leaving the hospital after at least one night. The rate of hospital discharges per inhabitant can be influenced by a number of demand- and supply-side factors. The former include the age structure and morbidity of the population, as well as other demographic characteristics, whereas the latter mainly refers to the capacity of the hospital sector and its substitutes in the outpatient sector. Austria displays the highest number of inpatient hospital discharges per year (2014 or latest available) with only Germany exhibiting similar values of more than 250 discharges per 1,000 inhabitants. These numbers are considerably above the average of the available European countries which was less than 170 discharges per 1,000 inhabitants (see Figure below). It should be noted that the four countries with the highest discharge rates, Austria, Germany, the Czech Republic and Hungary, are also among the countries with the highest number of hospital beds per inhabitant (see Figure 19).

Figure 29: Number of inpatient discharges per 1,000 inhabitants (2014 or latest available year (a))



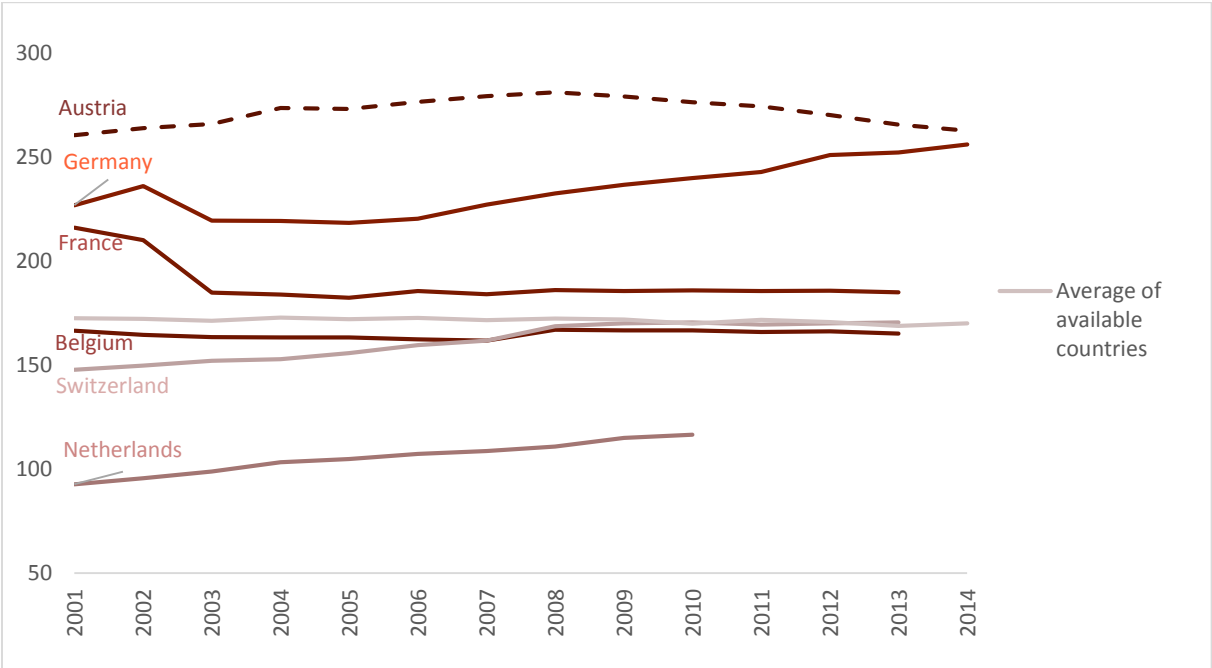
(a) Latest available year: BE: 2013, DK: 2013 (2009 for curative care), EL: 2011, FR: 2013, NL: 2010.

(*) Excludes discharges of healthy new-borns(**) Includes same-day discharges

Source: (52)

Time series data (2001 to 2014) does not reveal a noticeable trend for Austria regarding hospital discharges, as it is in line with the average trend of the available European OECD countries (see figure below). Other health insurance countries, such as Germany, the Netherlands and Switzerland, exhibit a compound annual growth rate of 0.9%, 2.3%, and 1.1%, respectively. On the contrary, France has a negative compound annual growth rate (- 1.2%).

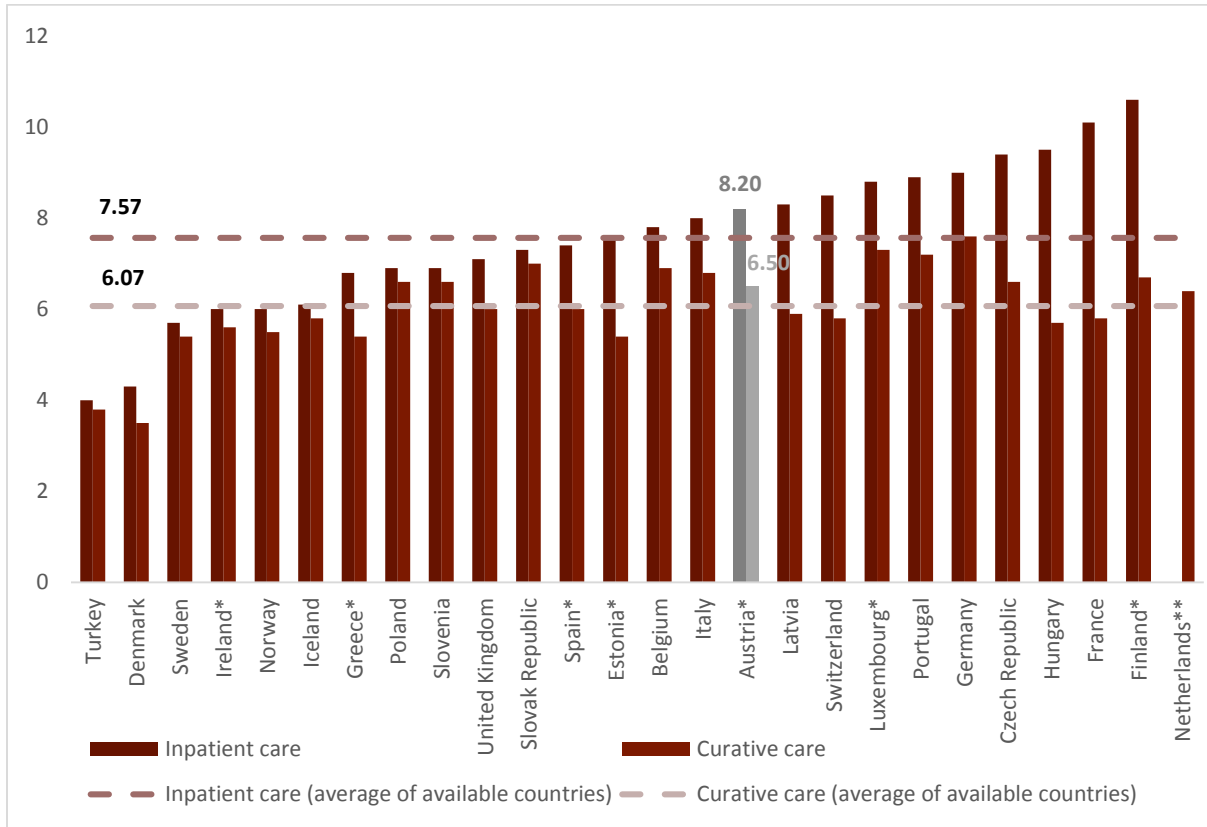
Figure 30: Inpatient hospital discharges per 1,000 inhabitants (2001-2014)



Source: (52)

Regarding the average length of hospital stay (total number of days stayed by all inpatients divided by the number of discharges per year), which is often cited as a measure for the efficiency of the hospital sector (OECD 2015), Austria lies marginally above the average for available European countries (i.e. 7.6% vs. 8.2% for inpatient care, and 6.1% vs 6.5% for curative care). On average, the length of inpatient stays are declining in the available European OECD countries.

Figure 31: Average length of stay in days (2014 or latest available year (a))



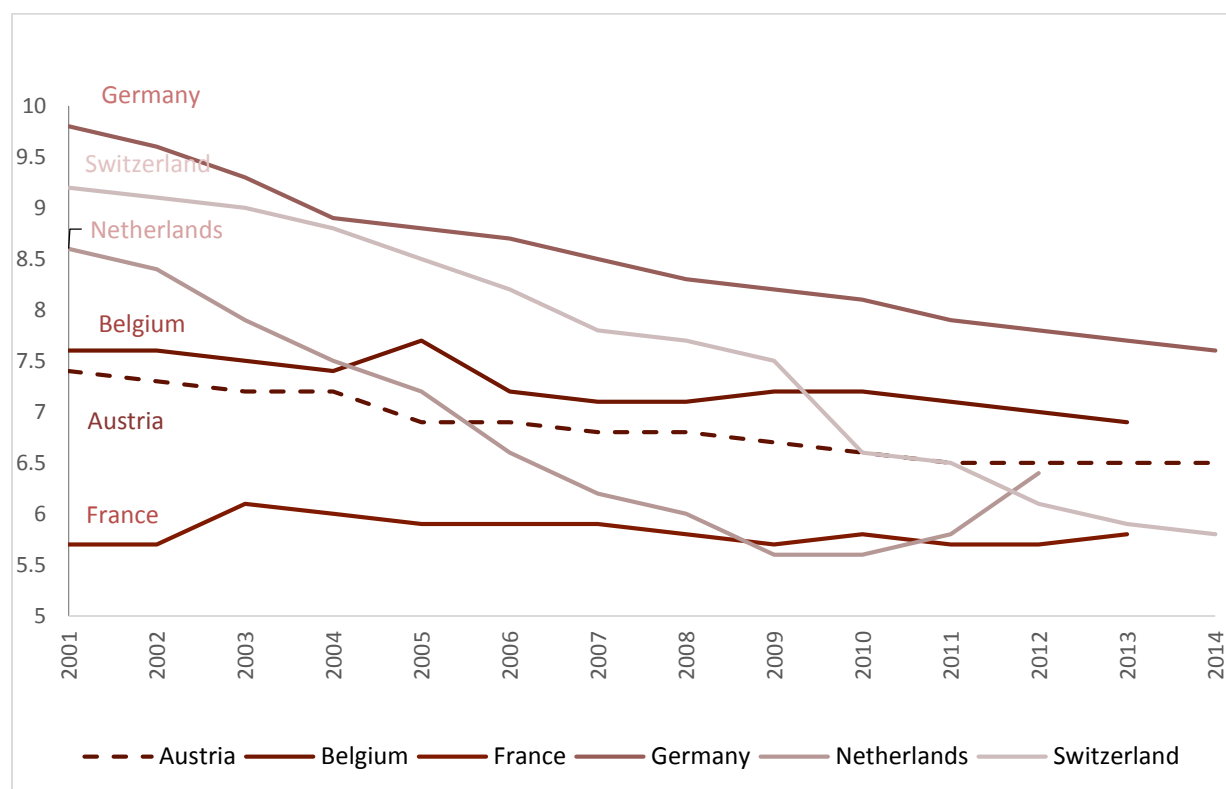
(a) Latest available year: BE: 2013, DK: 2013 (2005 for curative care), FR: 2013, EL: 2011, NL: 2006 (2012 for curative care)

(*) Excludes discharges of healthy new-borns

(**) Includes only acute/curative care |

Source: (52)

Figure 32: Average length of hospital stay for curative care (2001 – 2014)

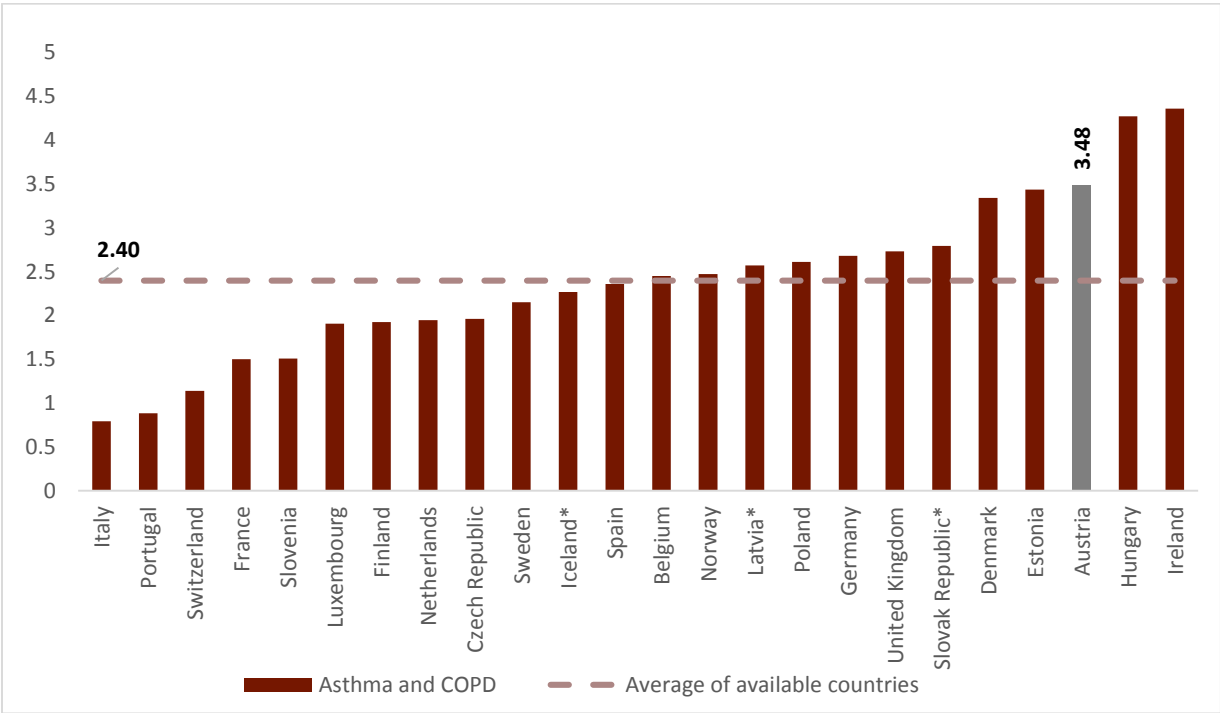


Source: (52)

To evaluate whether hospitalisations are potentially avoidable by accessible and effective primary health care, a list of so called ambulatory care sensitive conditions (ACSCs) has been proposed by various health system and policy researchers (58–61). The advantage of using ACSC as an indirect measure for primary care quality is that hospital data can be used, which is often routinely collected and therefore usually more reliable and comparable than data collected for example, through interviews. The OECD adopted the notion of ACSC, for which hospitalisations are potentially avoidable, to measure the quality of the primary care. Data on five common chronic diseases, which are part of the most used definitions of ACSCs (e.g. (58)), is available for cross-country comparisons. These conditions are asthma, COPD, diabetes, congestive heart failure (CHF) and hypertension. The data is presented as number of hospitalisations with one of the conditions, as primary diagnosis, among people aged 15 years or older, per 1,000 inhabitants. It is also age and sex standardised to the OECD population over 15 in 2010. For all conditions, reasons for variations could be not only the quality of the primary health care system, but also in differing levels of morbidity and differing coding practices between countries. Some countries were, for example, unable to fully rule out double counting of patients due to referrals (details can be found in the notes of Figure 33 to Figure 36) (17).

Asthma and COPD are analysed together given their close physiological relationship (Postma and Rabe 2015) (see Figure 33). Ireland, Hungary and Austria showed the highest hospitalisations rates for these conditions (3.48, 4.28 and 4.36. per 1,000 age-sex standardised population, respectively). The rate for Austria might be overestimated as not all transfers could be identified due to inappropriate coding and the lack of a patient identifier to correct for double-counting. The average number of hospitalisations of patients aged 15 and older per 1,000 sex-age standardised population in 2014 (or latest available year) was 2.4, which is around 30% less than the Austrian rate.

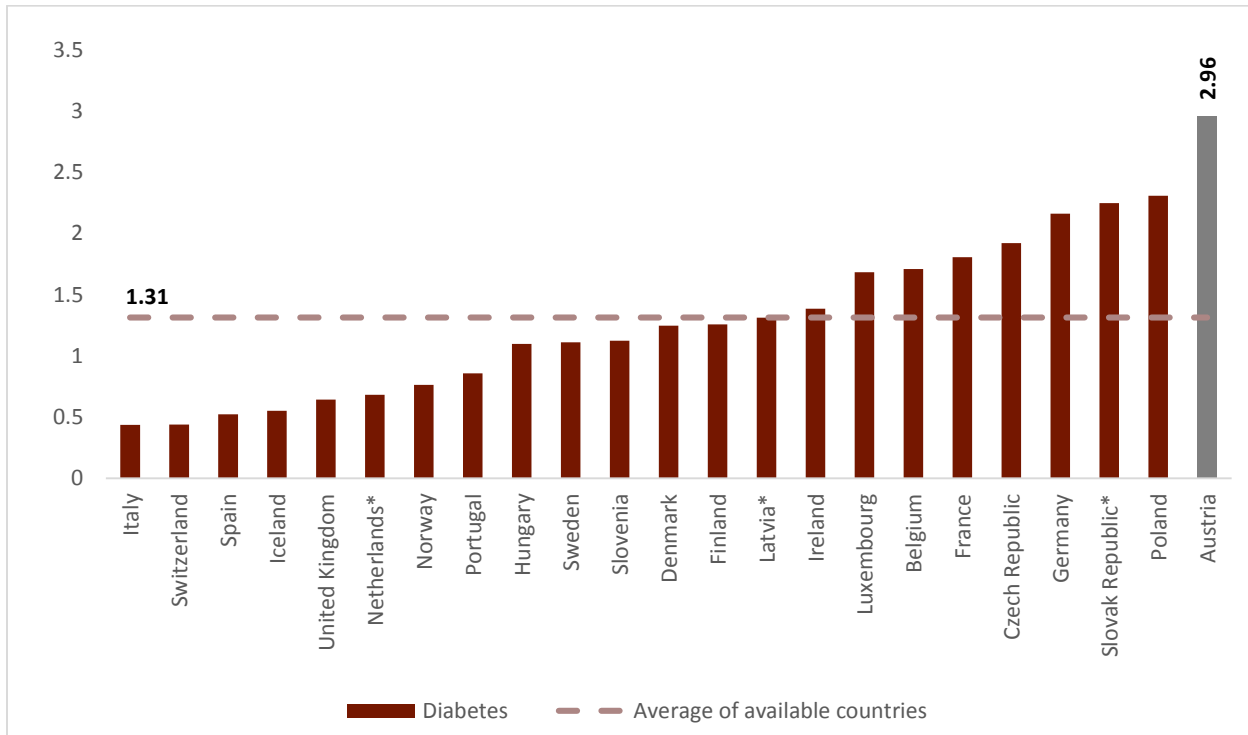
Figure 33: Hospitalisations for Asthma and COPD of population 15 years and older – age and sex standardised per 1,000 inhabitants (2013 or latest available year (a))



(a) Latest available year: BE: 2011, CH: 2012, HU: 2012, IS: 2012, LU: 2012, NL: 2011, SK: 2012
 (*) IS: Includes cystic fibrosis and anomalies of the respiratory system. LV: Excludes discharges from hospitals that only provide rehabilitation services. SK: Includes J45, J46 for asthma and J41, J42, J43, J44, J47 besides J40 for COPD
 Source: (52)

Hospitalisations for diabetes related conditions in Austria are more than twice as high as the average of the available European OECD countries (2.96 versus 1.31 per 1,000 sex-age standardised population over 15) (see Figure 34). This large difference might in part be due to double-counting of transferred patients, however, the countries with the second and third highest rate (Poland and Slovak republic) suffer from coding problems that might lead to an overestimation.

Figure 34: Hospitalisations for diabetes of population 15 years and older – age and sex standardised per 1,000 inhabitants (2013 or latest available year (a))



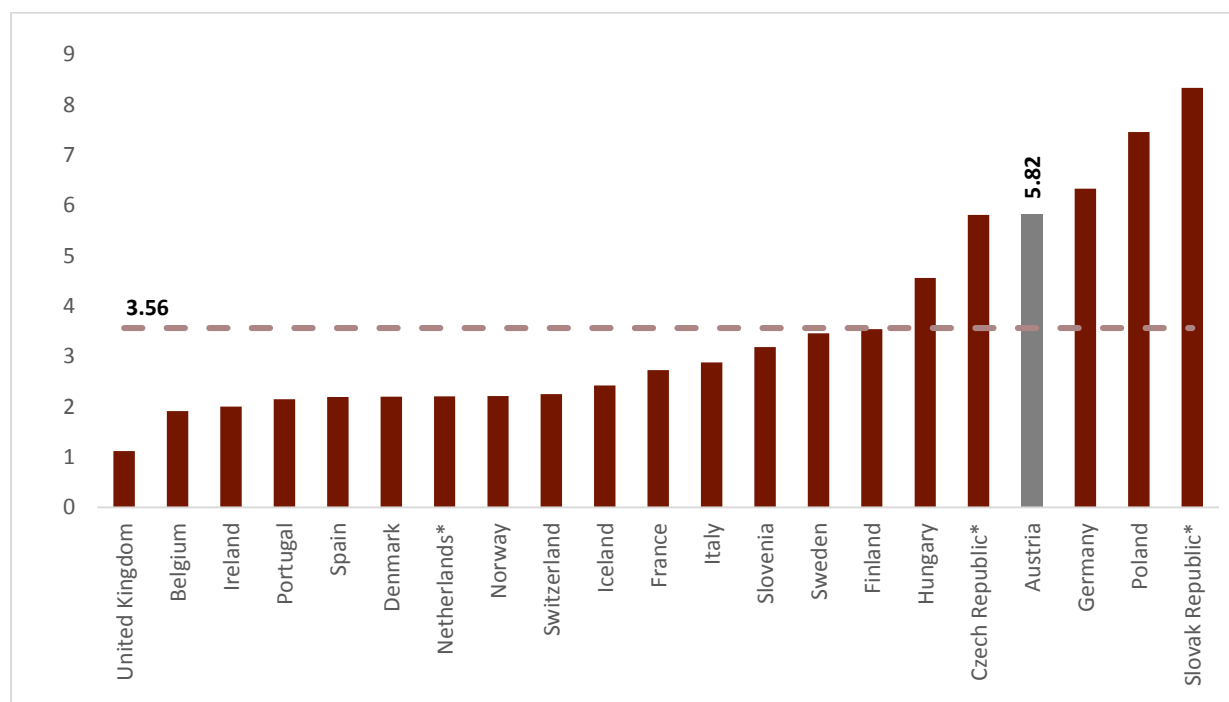
(a) Latest available year: BE: 2011, CH: 2012, HU: 2012, IS: 2012, LU: 2012, NL: 2011, SK: 2012

(*) **LV**: Excludes discharges from hospitals that only provide rehabilitation services. **NL**: Includes E12 to get comparable outcomes with ICD9. **SK**: Includes E10, E11, E13, and E14.

Source: (52)

Hypertension is the leading cause for congestive heart failure (Levy *et al.* 1996) and is therefore analysed together with it (see figure below) (62). Again, Austria exhibits rates above the average of the available European OECD countries (5.81 versus 3.56) for these conditions, with only Germany, Poland and the Slovak Republic having higher hospitalisations rates (6.33, 7.46 and 8.34, respectively).

Figure 35: Hospitalisations for congestive heart failure and hypertension of population 15 years and older – age and sex standardised per 1,000 inhabitants (2013 or latest available year (a))



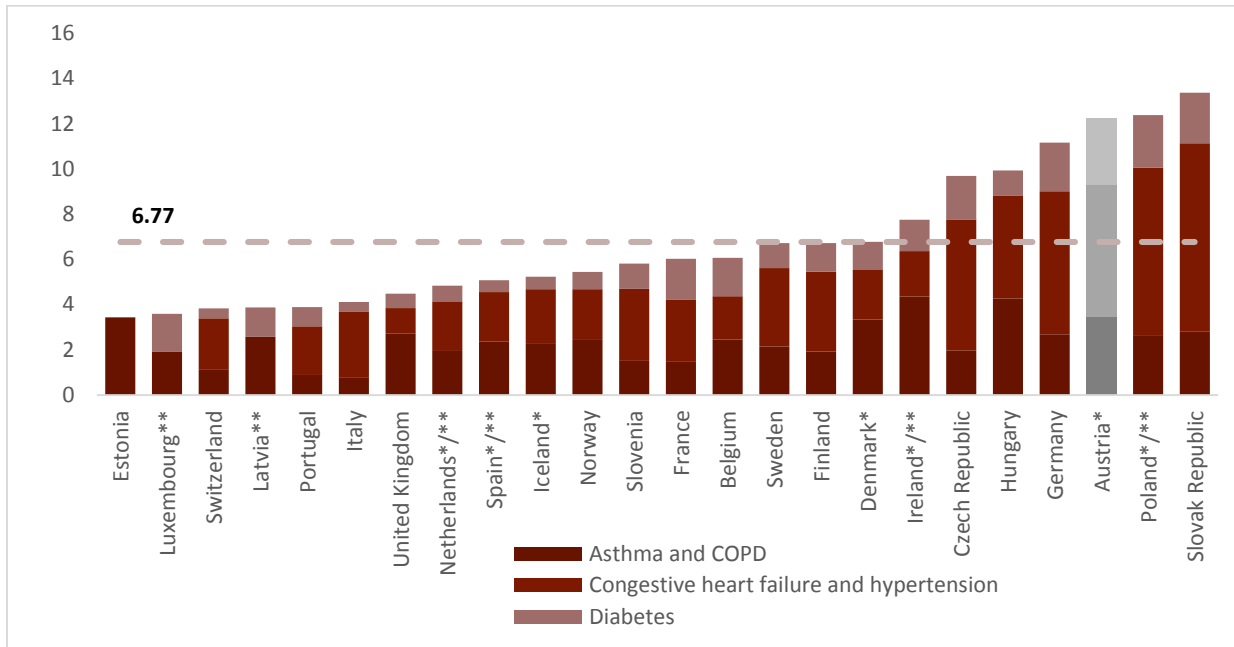
(a) Latest available year: BE: 2011, CH: 2012, HU: 2012, IS: 2012, LU: 2012, NL: 2011, SK: 2012

(*) **CZ**: Excludes operation diagnosis I00-I99. **LV**: Includes cases with cardiac procedures codes. **NL**: Includes 404.0, 404.1 and 404.9 instead of 404.01, .03, .11, .13, .91, .93 for CHF and excludes 403 and 404 for hypertension (ICD-9) **SK**: Includes I11 also I11.9, I13, I13.1 and I13.9, I50 for CHF and I10, I11, I11.0, I12, I12.0, I13, I13.0, I13.1 and I13.2 for hypertension and cases with cardiac procedures.

Source: (52)

The cross-country analysis of the cumulated hospitalisation rates for the five available ACSCs shows that Austria ranked third after the Slovak Republic and Poland with a total of 12.26 hospitalisations for asthma, COPD, diabetes, CHF and hypertension per 1,000 population over 15 (age and sex standardised) in 2013. The average of all available countries was 6.77, and therefore 45% below the level of Austria.

Figure 36: Hospitalisations for five ACSC conditions of population 15 years and older – age and sex standardised per 1,000 inhabitants (2013 or latest available year (a))



(a) Latest available year: BE: 2011, CH: 2012, HU: 2012, IS: 2012, LU: 2012, NL: 2011, SK: 2012

(*) Cases transferring from another institution were not excluded for all indicators

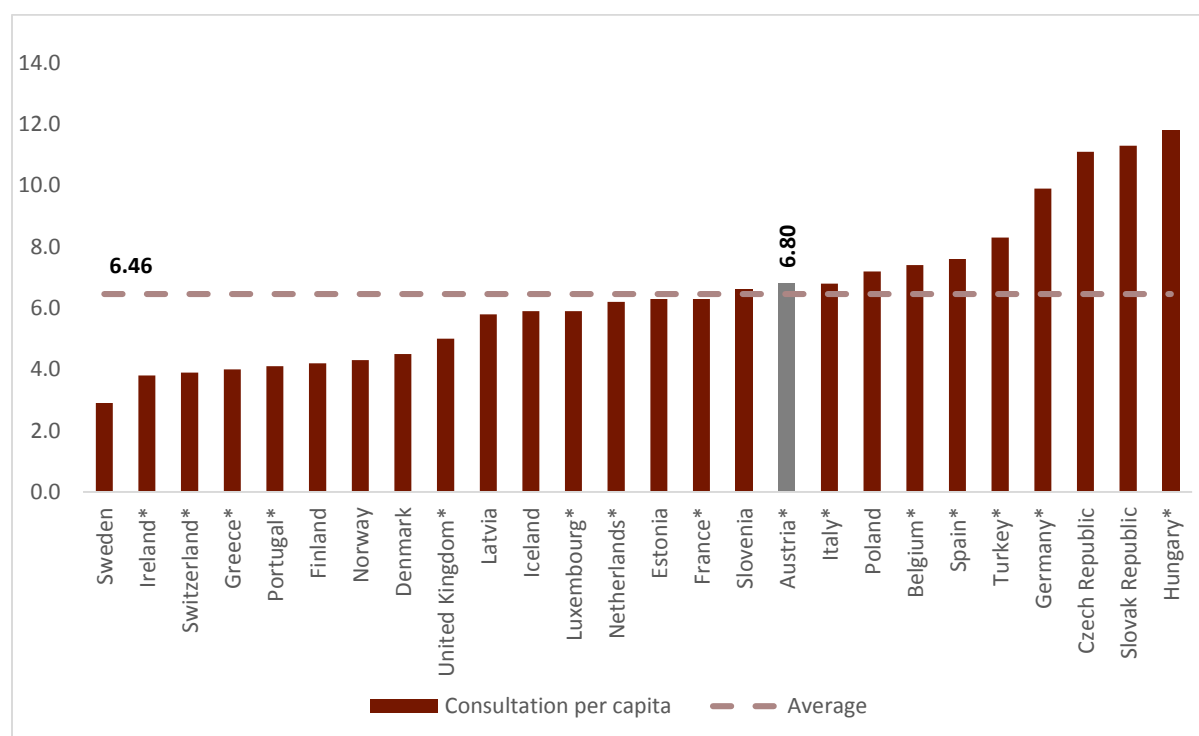
(**) See footnote 14

Source: (52)

Despite these rather high numbers of general and potentially avoidable hospitalisations, the number of outpatient consultations per capita in Austria is slightly above the average of all available European OECD countries (6.8 versus 6.5) (see figure below).

¹⁴ **IR:** Excludes data from private hospitals (underestimation of up to 15%). **LV:** Data refer to patients whose treatment expenses were covered from the state budget. **LU:** Data only cover the insured resident population. **NL:** Several hospitals stopped participating in the National Medical Registry and excludes several hospitals with incomplete data. **PL:** Completeness about 90%. **ES:** excludes data from private hospitals (underestimation of 15-20%, progressively increased since 2005).

Figure 37: Outpatient consultations per capita in 2014 (or latest available year (a)(b))



(a) Latest available year: BE: 2011, CH: 2013, CZ: 2013, EL: 2006, ES: 2013, IR: 2010, IT: 2013, NL: 2013, PT: 2012;
 (b) Includes consultations/visits to both generalist and specialist medical practitioners, physician’s offices, patient’s home, outpatient department in hospital; and ambulatory healthcare centres.

(*) See footnote ¹⁵

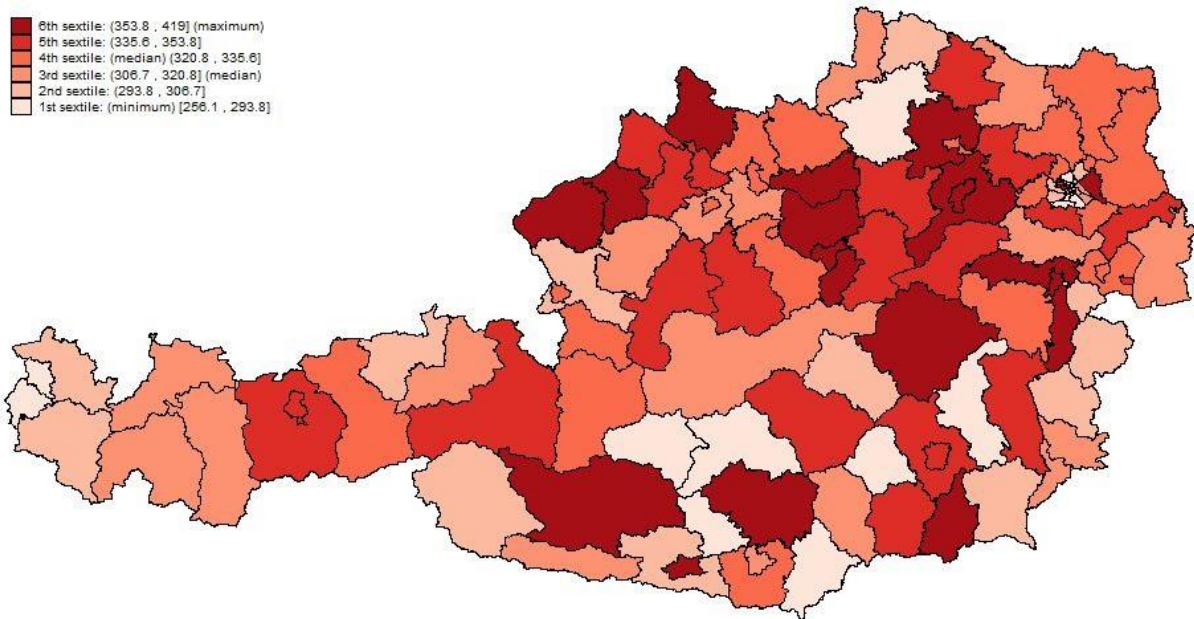
Source: (52)

3.5.2 Regional variations in healthcare utilisation

Hospitalisation rates do not only vary between countries but also within. In Austria, the all-cause hospitalisation rates in 2015 varied from 256.1 to 419.0 per 1,000 inhabitants (see Figure 38) between the 117 political districts (including city districts of Vienna). Hence, the political district with the highest rate recorded four times more hospitalisations than the region with the lowest rate.

¹⁵ **AT:** excludes privately paid consultations. **BE:** excludes self-employed; includes medical assistance during urgent transfer to hospital. **CH:** includes only population aged 15+; excludes collective households (e.g. retirement homes). **FR:** includes external consultations with midwives. **DE:** includes only the number of cases of physicians’ treatment according to reimbursement regulations (only counts first contact over a three month period). **EL:** excludes privately paid consultations. **HU:** includes consultations for diagnostic exams such as CT and MRI scans. **IR:** includes telephone consultations; includes only population 18+. **IT:** includes visits for prescribed laboratory tests and scheduled treatments (e.g. injections, physiotherapy). **NL:** excludes contacts for maternal and child care. **PT:** excludes visits to private practitioners. **ES:** includes only population aged 15+. **UK:** excludes consultations in independent sector and specialists outside hospital outpatient departments; includes telephone consultations.

Figure 38: Regional variations in all-cause hospitalisations per 1,000 inhabitants in 117 Austrian political districts (2015)¹⁶

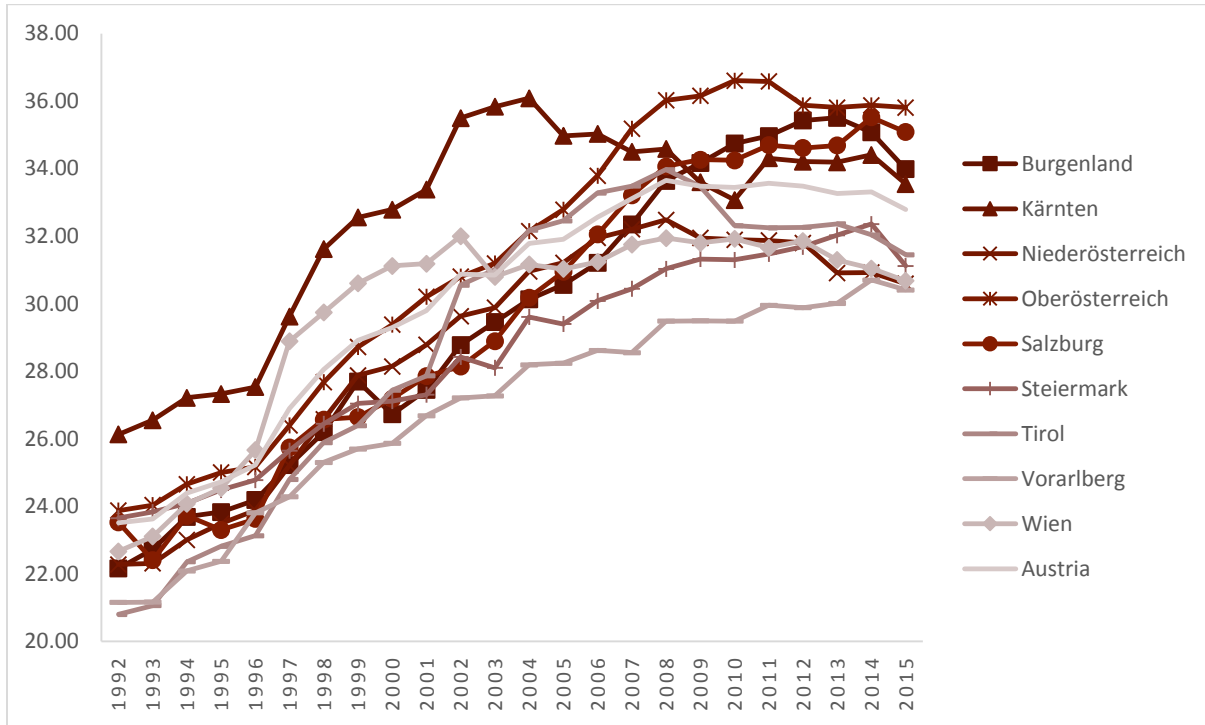


Source: Gesundheit Österreich GmbH / Austrian Ministry of Health

The long-term trend, however, seems to be following a similar pattern in all nine federal states (Bundesländer), with an increase in hospitalisations per 1,000 inhabitants of up until 2007 and a flattening of the curve since then (see Figure 39).

¹⁶ Method for classifying the choropleth map: class breaks correspond to quantiles of the distribution of variable attribute, so that each class includes approximately the same number of polygons.

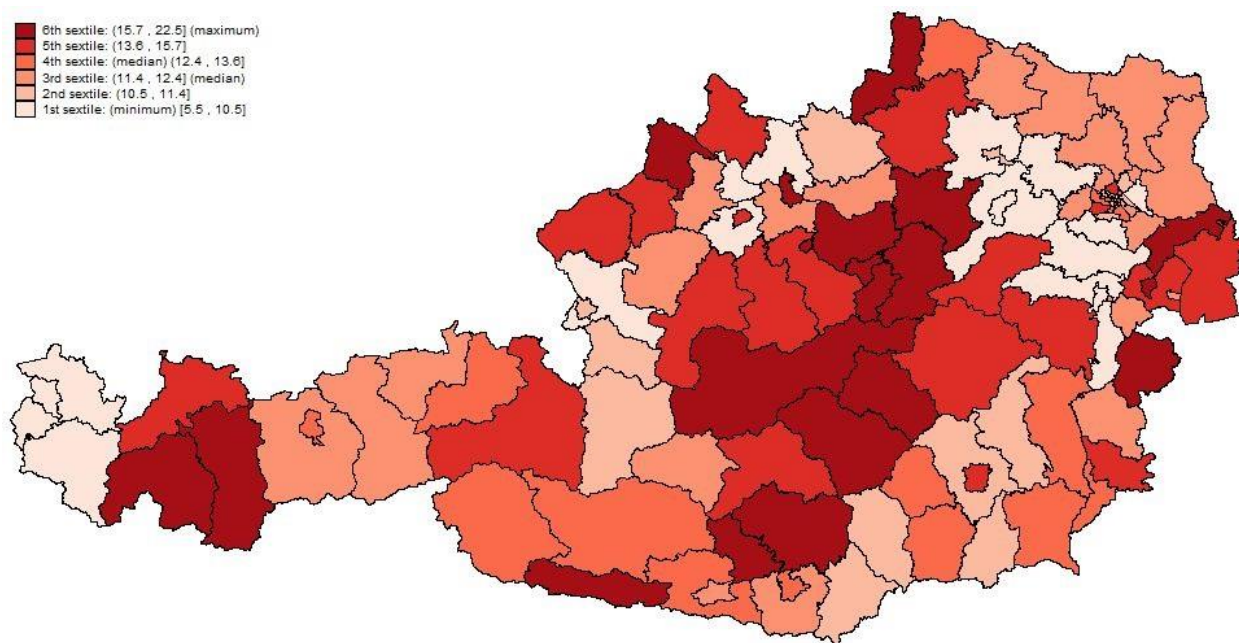
Figure 39: Time trend of all-cause hospitalisations per 1,000 inhabitants in 9 Austrian federal states (2015)



Source: Gesundheit Österreich GmbH / Austrian Ministry of Health

The district level variations in hospitalisations for selected ambulatory care sensitive conditions (ACSCs) ranges from 5.5 to 22.5 per 1,000 inhabitants; that is a variation of 4.1, indicating that the region with the highest rate of ACSC hospitalisations was 4.1 times greater than the region with the lowest recorded figures. For all-cause hospitalisations, the variation is significantly less at 1.6 (see Figure 40).

Figure 40: Regional variations in hospitalisations for asthma, COPD, congestive heart failure, hypertension and diabetes per 1,000 in 117 Austrian political districts (2013)¹⁷



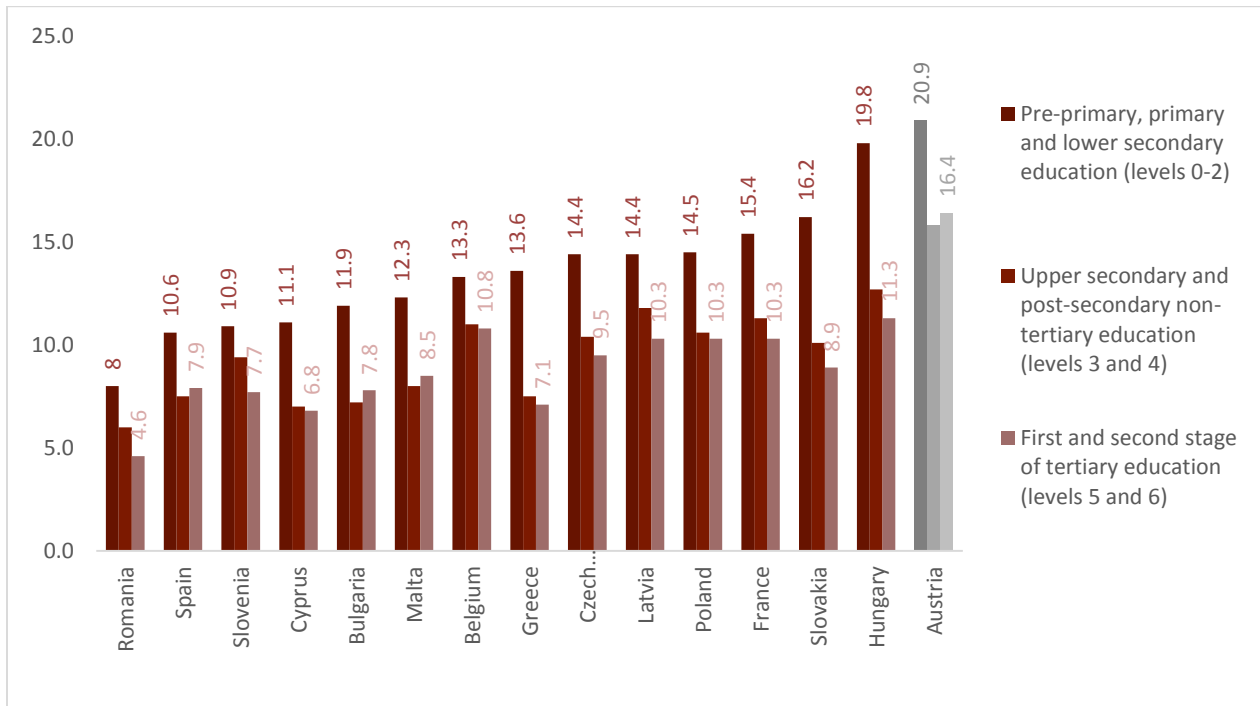
Source: Gesundheit Österreich GmbH / Austrian Ministry of Health

3.5.3 Equity of healthcare utilisation

It has been acknowledged by the WHO and most national governments that (unfair) health disparities due to socioeconomic characteristics exist and should be eliminated for social but also for economic reasons. Evidence regarding a socioeconomic gradient of health care utilisation in the EU Member States can be found in the results of the ‘European Health Interview Survey’ (EHIS). Data is publicly available for the first wave which was conducted between 2006 and 2009. The collected data shows that 17.3% of the Austrian population reported at least one inpatient hospitalisation during the 12 months before the interview (see Figure 41). Persons with pre-primary, primary and lower secondary education reported a higher rate of 20.9%, whereas only 16.4% of those with tertiary education reported inpatient stays. This means that persons with a tertiary education report 27% less inpatient stays than those with primary or lower secondary education. Compared to other European countries participating in the EHIS, this is a rather low gradient (the highest one is recorded in Greece with over 90%).

¹⁷ Method for classifying the choropleth map: class breaks correspond to quantiles of the distribution of variable attribute, so that each class includes approximately the same number of polygons.

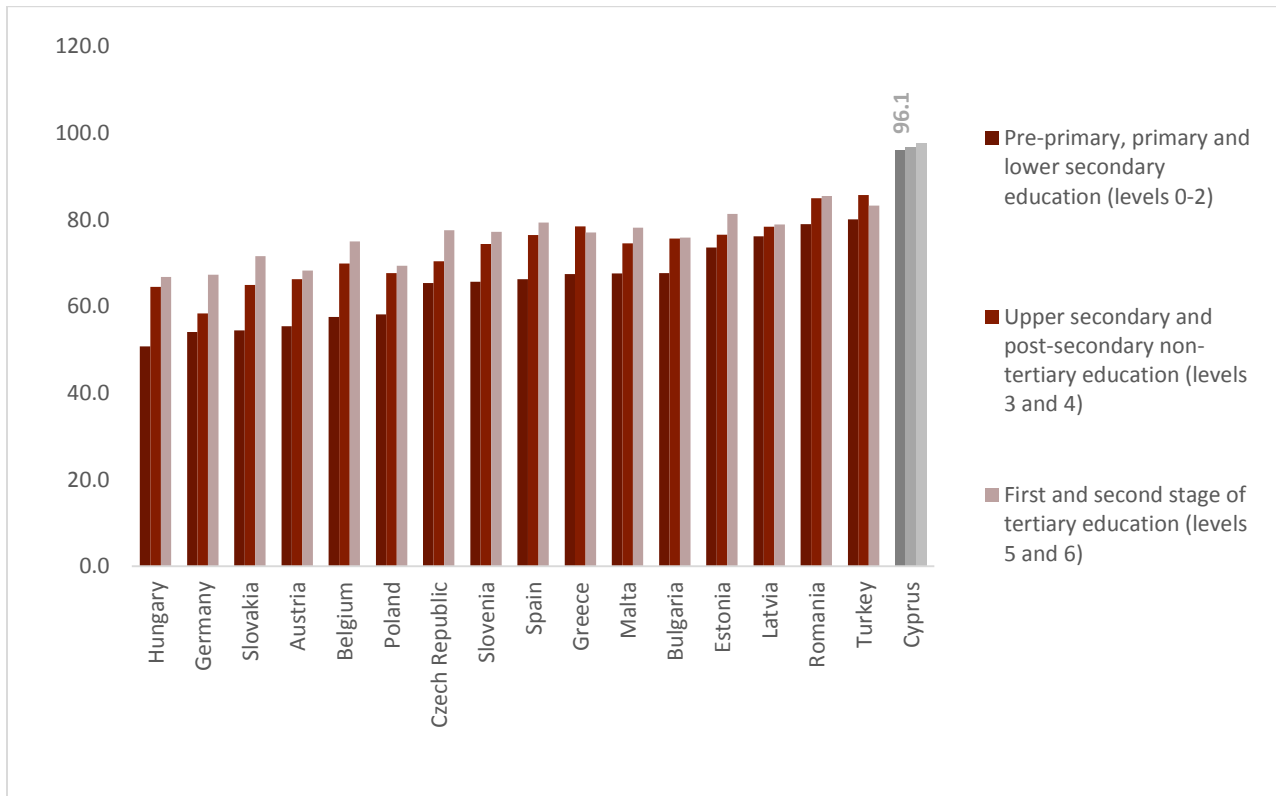
Figure 41: Percentage of population with at least one inpatient hospital admission during the last 12 months by educational attainment level (self-reported between 2006 and 2009)



Source: (63)

Regarding primary health care, 63.8% of the Austrian interviewed population stated that they had no contact with a general practitioner (GP) during the last 12 months. Of those persons whose highest educational attainment is lower secondary, only 55.4% reported that they had no GP contact which is almost 20% below the percentage reported by persons with tertiary education. Compared to the other countries in the survey, this is a rather high gradient (see Figure 42).

Figure 42: Percentage of population with no contacts with a general practitioner during the last 12 months by educational attainment level (self-reported between 2006 and 2009)



Source: (63)

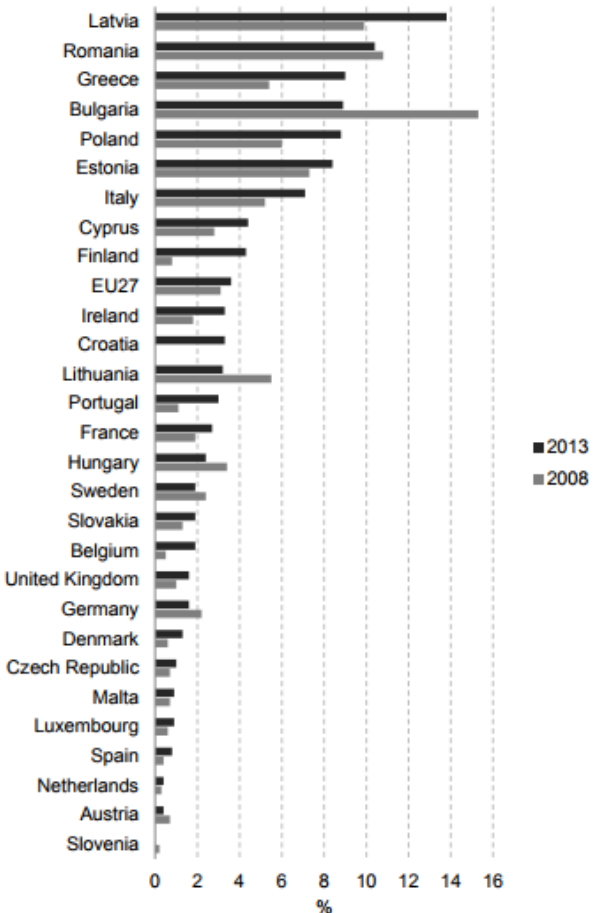
3.5.4 Unmet need

In a study conducted by Detollenaere *et al.* only a small percentage of the Austrian population reported unmet need; of the 32 countries analysed, Austria had the 7th lowest percentage of people reporting unmet healthcare needs (64). In addition, the authors showed that the gap between healthcare needs of low- and high-income groups was comparatively small, and only six countries demonstrated smaller gaps. The data therefore implies that Austria does not exhibit significantly large inequities in access to healthcare. The Netherlands, which also operates a social insurance system, had an even smaller percentage of people reporting unmet need, and interestingly, scored highly with regard to primary care strength indicators. Conversely, all of France, Belgium, Switzerland, Luxembourg and Germany presented larger percentages, the highest being France where over 5% of people reported unmet need. Austria conformed to the general trend whereby the lowest income group reported the highest unmet need.

Results from the above study are mirrored by data collected and analysed within a recent report by the European Commission (65). Based on EU-SILC (Statistics on Income and Living Conditions) data, of the 29

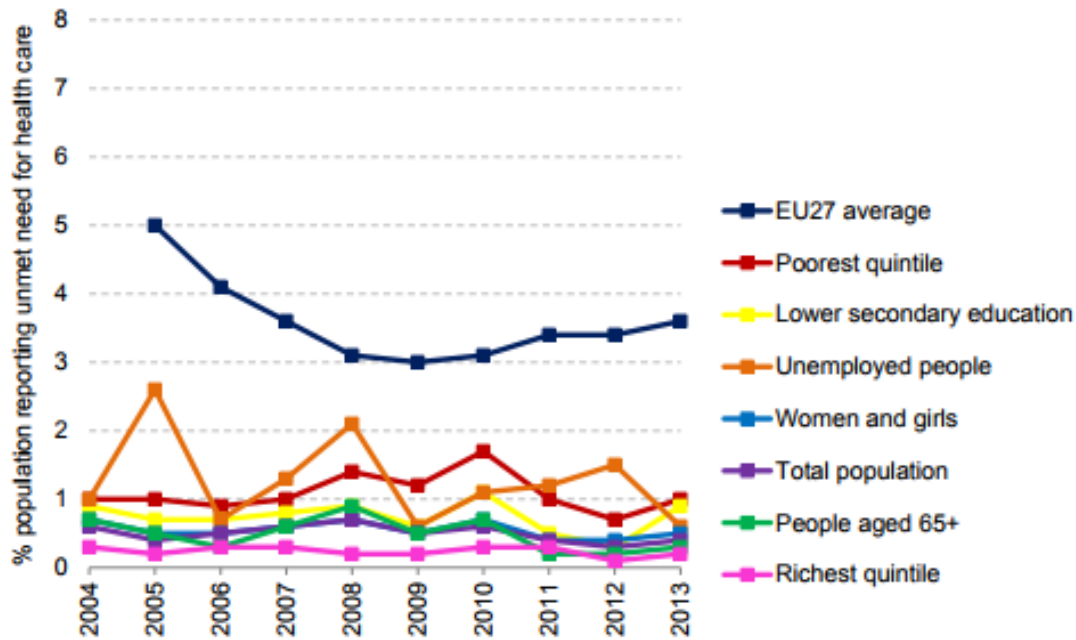
countries examined, Austria had the second lowest share of people reporting unmet healthcare needs as a result of cost, travel distance and waiting times (as of 2013) (65). Further, results from the data show that Austria has made significant progress in this area between years 2008 and 2013 (Figure 43). Using the same data, an analysis of unmet need in Austria, compared to the EU(27), was also undertaken according to range of population groups, namely: poorest quintile, lower secondary education, unemployed, female, people aged 65+ and richest quintile. Results from this analysis are promising, given even those in vulnerable groups (e.g. unemployed) recorded significantly lower levels of unmet need than the EU average (see Figure 44).

Figure 43: Share of people reporting unmet need for healthcare due to cost, travel distance and waiting time (EU(28), 2008-13)



Source: Taken directly from (65)

Figure 44: Trends in unmet need for healthcare due to cost, distance or waiting time (Austria and EU(27) average, 2004-13)



Source: Taken directly from (65)

3.6 Summary

The performance of Austria's healthcare system can be summarised using the main findings of this chapter. Compared with other European and OECD countries, Austria spends a relatively large proportion of GDP on healthcare, albeit it is more similar to those OECD countries which utilise a health insurance system. This finding is mirrored at the individual level when analysing health expenditure per capita data.

Similar to other European countries, healthcare expenditure as a proportion of GDP is rising, however by contrast, the average annual growth rate in health expenditure per capita is decreasing. Austria's main source of financing is compulsory health insurance yet it also relies quite heavily on taxation and government schemes, unlike many of its OECD social insurance country peers.

The data in this chapter provides an insight into the relative importance of different health care providers. It is evident that hospital provision is inflated compared to many other OECD countries, due to the high numbers of hospitals and hospital beds, implying insufficient provision is available at the primary care level. With regards to health care professionals, data supports the view that there is an over reliance on physicians and under reliance on other professions, in particular nurses.

Life expectancy in Austria has exhibited an upward trend, which is also reflected in comparator countries, however, current life expectancy is lower than in several European countries with health insurance systems, suggesting Austria is underachieving in this respect. Further, relative to a number of European countries, life expectancy projections are low. Such results suggest further effort is required to enhance current public health initiatives (as outlined in chapter 7).

The indicator of deaths from cancer per 100,000 people provides a largely positive view of health outcomes in Austria, and for most types of cancer Austria performs close to the average of the countries examined, or better with regards to age standardised net survival rates. Prevalence of diabetes however is above the European Union average. Finally, the burden of disease in Austria is largely similar to that in analogous countries with the highest amount of premature death attributable to ischaemic heart disease, whilst the biggest risk factors are associated with unhealthy lifestyles.

Secondary healthcare utilisation is relatively high in Austria, compared to similar countries, and analysis of hospitalisations for ambulatory care sensitive conditions provides insight as to whether hospitalisations in general are potentially unnecessary. Interestingly, Austria displayed above average rates for asthma and COPD, diabetes and hypertension and congestive heart failure, which provides further evidence that primary healthcare performance is less than optimal. Utilisation of healthcare differs according to educational attainment, suggesting inequities do exist, with more educated persons reporting a lower percentage of inpatient stays in hospitals. Whilst there appears to be an apparent disparity, it is important to observe that it is less extreme than those in other European countries.

Figure 45: Overview of international comparative analysis results

<p>Financing</p> <ul style="list-style-type: none">• Above average expenditure on health when compared to the EU average, however, lower than other countries operating social health insurance systems• Relatively low average annual growth rate in years 2005-09, and even less between 2009-15 <p>Physical and human resources</p> <ul style="list-style-type: none">• Relatively high number of practising physicians per 1,000 people, with a concurrently low number of practising nurses and pharmacists• Significant number of hospitals and hospital beds, and thus high rates of inpatient admissions relative to EU and OECD countries
--

Health outcomes

- Life expectancy figures for men and women mirror those found in other European social health insurance systems, however, in regard to projections, Austria performs relatively worse
- Similar to most developed countries, major areas of disease burden are non-communicable and include ischemic heart disease, COPD, and diabetes

Utilisation

- Austria has the highest number of inpatient discharges per 1,000 people when compared to European OECD countries, however, an analysis of trends reveals the number of discharges has been falling since 2008
- Hospitalisations by ACSC reveal that Austria has a relatively high number of admissions for asthma and COPD, diabetes, and congestive heart failure
- In the outpatient sector, utilisation aligns with figures recorded across a number of OECD countries
- All-cause and ACSC hospitalisation rates differ across the nine states, with the latter experiencing significantly greater variation
- Austria experiences relatively low levels of unmet healthcare need across all groups in society, including the unemployed and those in the lowest income quintile.

4 Structure of Austria's social security system

This chapter outlines the organisation of the Austrian social security system. Based on the strengths and weakness of Austria's healthcare system, four alternative social insurance models have been proposed. The models ultimately aim to improve patient wellbeing by improving both efficiency, effectiveness and equity within the system.

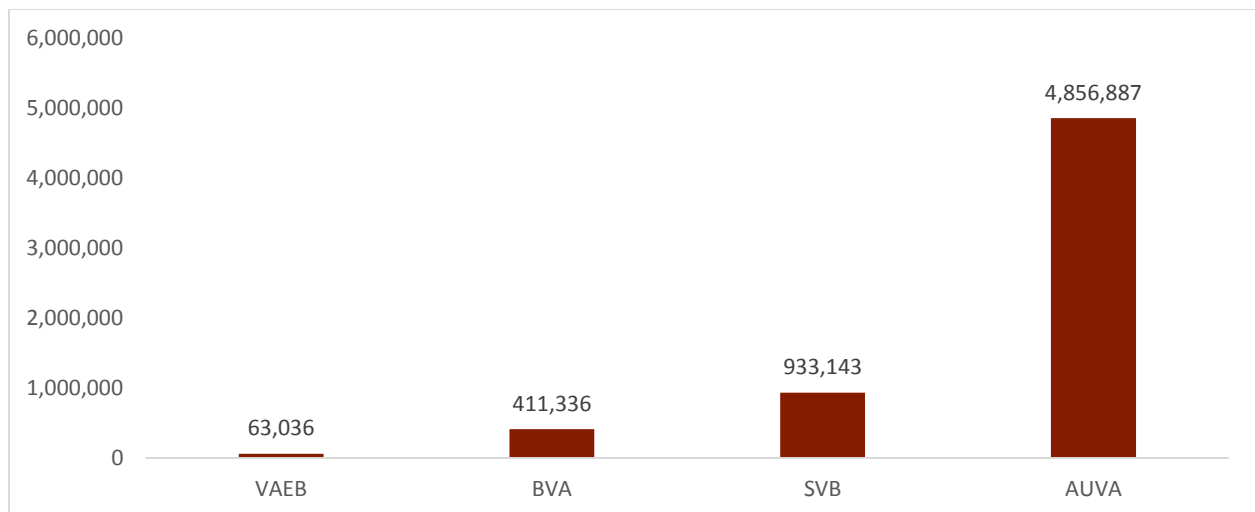
4.1 Structure of social security in Austria

4.1.1 Status quo

Austria's social security system is comprised of three pillars, namely, accident, health and pension insurance. There are a total of 21 insurance carriers within the current system who offer single or multiple types of insurance (66). As previously outlined, all 21 social security carriers are united under the HVSV.

Accident insurance covers physical damage, death or inability to work, as a result of workplace accidents or occupational disease. Accident insurance is offered by the: Austrian Workers' Compensation Board (AUVA); Insurance Institution for Railways and Mining (VAEB); Insurance Institution for Public Sector Employees (BVA); and the Insurance Institute for Farmers (SVB). AUVA is the largest provider, covering 78% of the population (67).

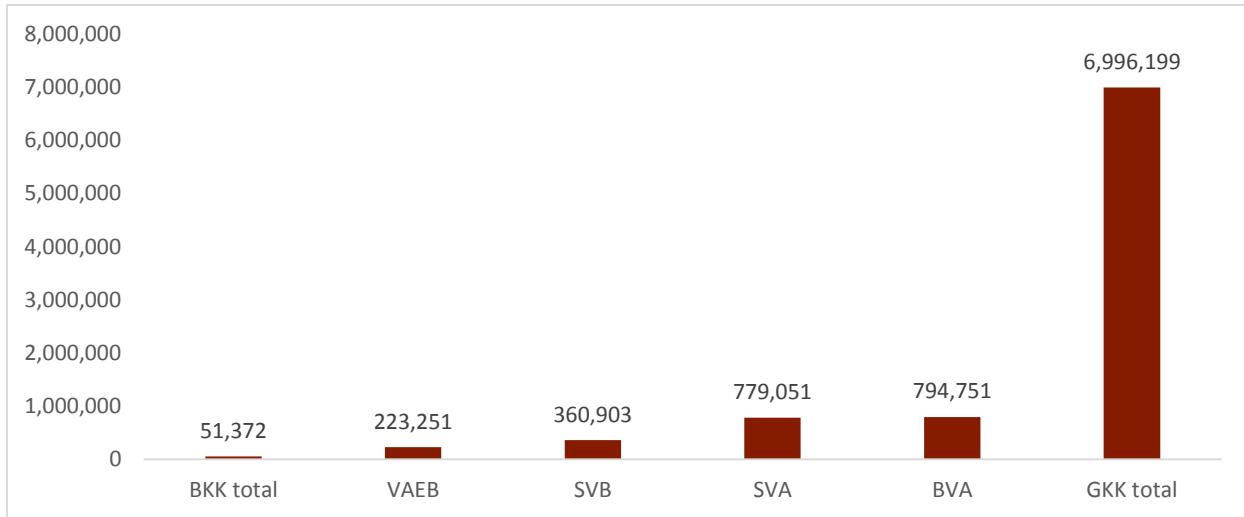
Figure 46: Number of insured persons per accident insurance carrier



Health insurance covers sickness, health check-ups, incapacity to work caused by diseases, as well as maternity costs. Most of the population are covered by one of the nine GKKs (i.e. 76%), covering each of the Länder. The remaining 24% of the population are covered by either the Insurance Institution for the

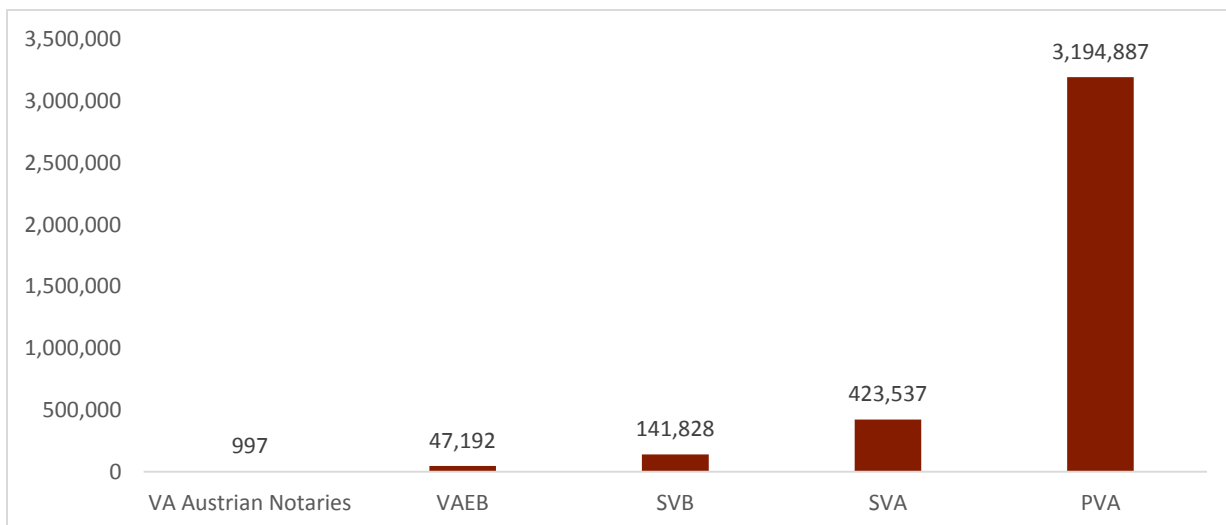
self-employed (SVA), the VAEB, SVB, BVA, and to a lesser extent, one of the 15 KFAs (Krankenfürsorgeanstalten) (13).

Figure 47: Number of insured persons per health insurance carrier



Lastly, **pension insurance** covers insurance claims for those of retirement age, as well as for those who have limited working ability, and death. Pension insurance also provides rehabilitation services and healthcare. Eighty-four per cent of the market is covered by the PVA. Pension insurance is also provided by the SVA, SVB and VAEB, in addition, there is a pension insurance institution for notaries (67).

Figure 48: Number of insured persons per pension insurance carrier



Although not technically within the social insurance system, it is important to highlight health and accident insurance offered to civil servants through the Krankenfürsorgeanstalten (KFA).¹⁸ There are currently 15 KFAs covering health and accident insurance to 200,000 people at the Länder or community level. In addition, since 2000, seven employment groups have been given the choice to ‘opt out’ of the statutory insurance scheme (article 5, GSVG), given their insurance is covered, for example, by voluntary health insurance under the ASVG or GSVG. These professions cover pharmacists, physicians, lawyers, architects, public accountants, veterinarians and notaries (68). For further details on the structure of Austria’s social insurance system, please see Volume 4 – Situational Analysis.

4.1.2 Policy options: Social insurance structural models

The debate of merging social insurance carriers has been discussed extensively within Austria over the past decade. Advocates of amalgamating carriers point to potential benefits, namely from economies of scale and scope (as outlined below).

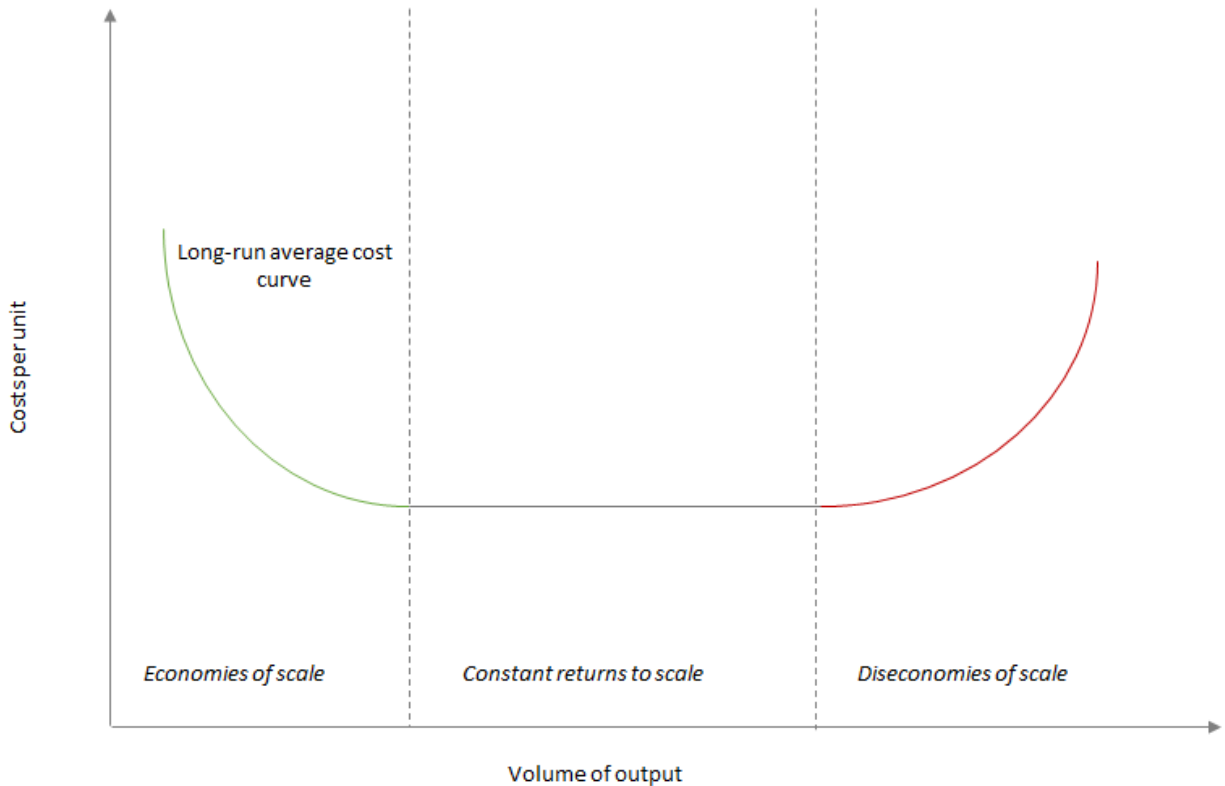
Economies of scale

In theory, firms can reduce average costs of production if they increase their level of output. This is commonly referred to in the literature as ‘economies of scale’ (69). For example, economies of scale may be achieved by streamlining IT processes, human resources, as well as data collection and analysis. It is important to note that, theoretically, economies of scale is not continuous, in that once a certain threshold is reached, the decline in costs per unit will stagnate and eventually rise once more (see figure below). For this reason, firms should take caution when expanding their operations given it may also lead to diseconomies of scale due to the heightened complexities associated with managing a significantly large business (70).

The specific threshold before diseconomies of scale are reached is rarely known, and is likely to differ across and within industries. Consequently, economies of scale are not necessarily achieved in practice.

¹⁸ KFAs operate in Carinthia (n=1), Lower Austria (n=1), Upper Austria (n=6), Salzburg (n=1), Styria (n=1), Tyrol (n=2) and Vienna (n=1) (15 KFAs in total) (Source: BGGI §2 Abs. 2: Ausnahmen von der Krankenversicherung).

Figure 49: Long-run returns to scale



Economies of scope

A second driver of efficiency relates to economies of scope, whereby it is less expensive to produce a range of products together, as opposed to producing each product on its own (e.g. by reducing parallel structures, which lead to unnecessary costs) (70). Regarding economies of scope, there exist two conflicting theories, namely the 'Conglomeration Hypothesis' and 'Strategic Focus' (71). The former, states that firms can take advantage of cost and revenue scope economies by operating in several business lines or offering a multitude of different products, resulting in superior efficiency compared to specialised firms. The latter, on the other hand, argues that specialised insurers generate superior efficiency by focusing on one or a limited set of offerings from their core business, where they exhibit competitive advantages (71). According to Cummins *et al.* (2010), in terms of insurance, the Strategic Focus argument outweighs arguments made within the Conglomeration Hypothesis (71). Further Conglomeration Hypothesis within the Austrian social health insurance context is not possible given there is no opportunity to expand outside the three forms of insurance.

Additional benefits of mergers

Amalgamation of carriers may also address specific challenges facing Austria's social security system including:

- The lack of cooperation among insurance carriers (for example, during contract negotiations with the Chamber of Physicians, and in regard to investment of own institutions)
- Differences in benefit packages across carriers, with wealthier funds offering their insured population a wider range of benefits and better access to healthcare
- Structural fragmentation caused by national and regional laws governing different insurance carriers
- Limited risk-equalisation to take into account different structures across health insurance carriers.

Notwithstanding the above, amalgamation is not the only tool available for improving efficiency and coordination within the system. That is, significant improvements to efficiency and coordination can be potentially achieved within the current structural model given weaknesses within the system are addressed. Therefore, it is recommended that the net-benefits of restructuring the social insurance system be contrasted against enhanced cross-carrier cooperation.

In light of this, four alternative structural models have been developed, each offering differing levels of amalgamation across insurance carriers. For each of the four models proposed, an overview of the model, rationale, challenges and legal considerations have been provided.

It is important to note that amalgamation is unlikely to lead to cost-savings in the short-run given it takes time to adjust supply-side factors, such as office space and labour. Further, additional costs will arise from the development and implementation of new processes that are compatible with the new structural model. This is evidenced by the 2002 merger between pension insurance for workers and employees (PVArb and PVAng). Specifically, the greatest cost incurred by the merger was in 2003 (one year after the merge), which amounted to €35.2 million. This figure subsequently declined to €22.7 million in 2005, and eventually €5.6 million by 2008. Reasons for the additional short-term costs include inflexible labour and capital, as well as there being significant structural differences between the two PVA branches. Specifically, the PVA for workers was organised in a decentralised manner with four regional offices, whereas the PVA for the employees had one central head quarter overseeing nine branches.¹⁹

¹⁹ The final structure largely mirrored that of the workers PVA, with the development of nine regional offices. This decentralised structure required additional staff, with associated increases in office space.

In the long-run, merger costs declined for several reasons including:

- Selling unused properties
- Standardising IT processes to fit with the general structure used within social insurance
- Bulk purchasing of standard software licenses
- Concurrent sourcing of IT personnel (i.e. hire externals on an ad-hoc basis (which led to annual savings of €1.36 million)).

Despite these savings, overall, the predicted savings of 10% were counteracted by overall costs totalling €114.8 million (as of 2007) (72).

Further evidence that mergers lead to cost increases in the short-run is found within the German context. Specifically, the German Court of Audit found administration costs rose in the first year after mergers (up to 18% for certain sickness funds). In addition, due to collective employment contracts, the level of staff cannot be adjusted, thus limiting efficiency potentials.²⁰

²⁰ Information regarding the impact of mergers in the short-run completed by Contrast Ernst&Young.

Table 3: Proposed structural models for Austrian social security system

Model	Description	Risk-adjustment (RA)	Rationale	Challenges
Model 1* <i>Partial amalgamation</i>	<ul style="list-style-type: none"> - 1 accident insurance - 1 pension insurance - 1 employed health insurance - 1 self-employed health insurance 	<ul style="list-style-type: none"> - Limited need for formal RA due to large insurance pools - Re-evaluate need for RA every five years 	<ul style="list-style-type: none"> - Standard fees, access and benefits - Joint procurement - Economies of scale - Knowledge specialisation - Introduce KFAs into social security 	<ul style="list-style-type: none"> - Standardisation - KFA competencies - SVB contribution base - BKK administration costs
Model 2* <i>Limited amalgamation</i>	<ul style="list-style-type: none"> - 1 pension insurance - 1 self-employed health insurance - 1 health insurance for employed (excluding civil servants) - 1 accident insurance for employed (excluding civil servants) - Joint health and accident insurance for civil servants 	<ul style="list-style-type: none"> - RA between civil servants and employed health insurance 	<ul style="list-style-type: none"> - Standard fees, access and benefits - Joint procurement - Economies of scale - Knowledge specialisation - Introduce KFAs into social security Step-wise approach to amalgamation 	<ul style="list-style-type: none"> - Standardisation - KFA competencies - SVB contribution base - BKK administration costs - Develop RA across employed health insurance carriers and funds for civil servants
Model 3* <i>Health and accident amalgamation</i>	<ul style="list-style-type: none"> - 1 pension insurance - 1 health and accident insurance split according to the nine states 	<ul style="list-style-type: none"> - Limited need for formal RA due to large insurance pools - Re-evaluate need for RA every five years 	<ul style="list-style-type: none"> - Standard fees, access and benefits - Joint procurement - Economies of scale - Knowledge specialisation 	<ul style="list-style-type: none"> - Standardisation - KFA competencies - SVB contribution base - BKK administration costs - Splitting AUVA into regions

Model	Description	Risk-adjustment (RA)	Rationale	Challenges
			Introduce KFAs into social security	
Model 4 <i>Insurance coordination</i>	<ul style="list-style-type: none"> - Current structure - Enhancement of current competence centres - Enhanced risk-adjustment across all health insurance carriers 	<ul style="list-style-type: none"> - Develop RA across all insurance carriers 	<ul style="list-style-type: none"> - Enhance equity and efficiency - Improve coordination among health insurance carriers 	<ul style="list-style-type: none"> - Encouraging meaningful participation in competence centres - Exclusion of KFA from social security

Note: *Various sub-models exists for models 1, 2 and 3 and have been included in the table below.

Model 1: Partial amalgamation

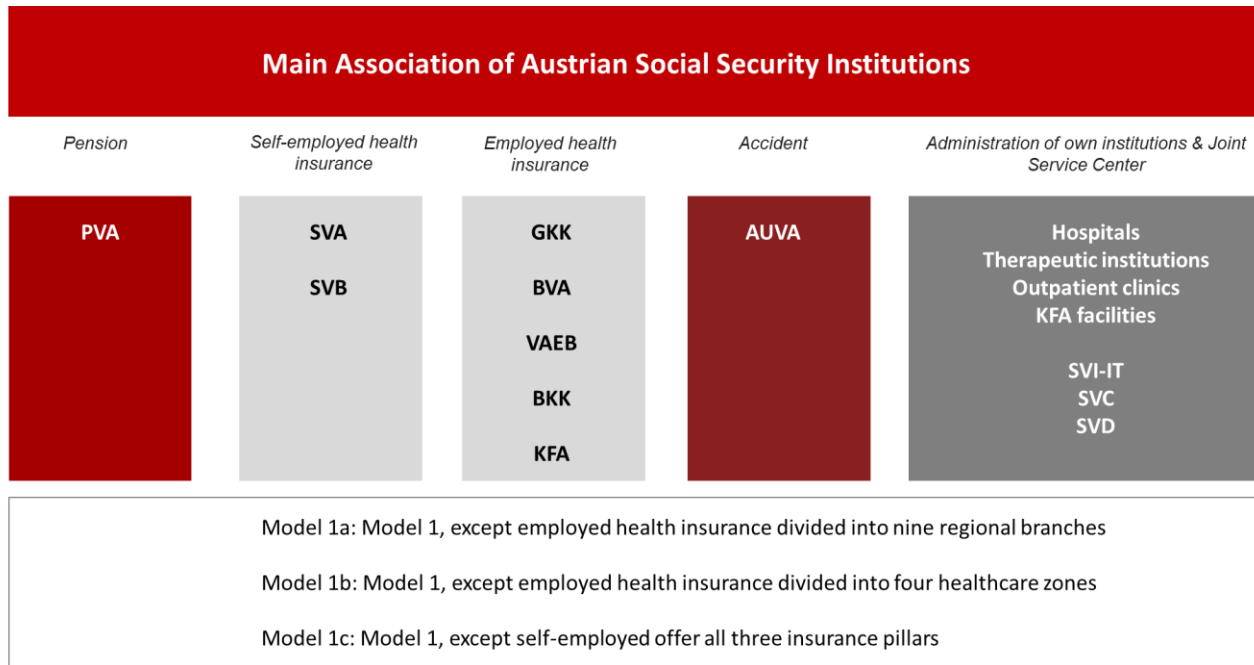
Description

Model 1 retains the three-pillared structure of the current system with separate insurance for health, accident (AUVA) and pension (PVA). Under the new system, all three insurance pillars would be nationalised with no single insurance carrier offering multiple or all types of insurance. The health insurance pillar would be split into two groups – employed and self-employed. Employed health insurance would cover all nine regional health insurance funds (GKK), the BVA, VAEB, BKKs, and KFAs, which currently operate outside the social security system. Self-employed health insurance would amalgamate the SVA and SVB. Governance principles and representation for both health insurance carriers could be based on the principle of proportionality.

In regard to national pension and accident insurance pillars, under model 1, all types of rehabilitation services would be subsumed by AUVA, with the exception of invalidity rehabilitation. This arrangement is necessary given these services are funded by pension insurance.

Health care institutions owned and run by insurance carriers (i.e. hospitals, outpatient clinics, rehabilitation centres) would be managed by one central agency, with similar arrangements applying for shared service centres. One exemption would apply, specifically, AUVA will retain control over their own hospitals.

Figure 50: Structural model 1



Rationale

Unlike the status quo, model 1 delineates each insurance pillar so that health (employed), health (self-employed), accident and pension are provided on a national level. Under this new arrangement, one health insurance carrier for the self-employed and one for the employed would be responsible for negotiating with the Chamber of Physicians on tariff levels and services. As a result, variability in fee schedules would be minimised.

The new structure would create larger risk pools, particularly within the health insurance pillar, thereby improving efficiency and equity within the system (see section 4.2 for further details on the benefits of larger risk pools).

Given the size of each of the two health insurance carriers (self-employed and employed), it is presumed that no formal risk-equalisation mechanism is needed. However, the need for a formal system of redistributing funds could be evaluated every five years.

Lastly, creating four separate insurance pillars, each with their own focus, can foster synergies and knowledge specialisation, leading to better services for the insured population.

Challenges

Despite the above benefits of consolidating insurance carriers, several challenges are associated with this form of amalgamation. Each of these challenges has been summarised in the table below, as well as an aligning strategy.

Table 4: Challenges associated with implementing model 1

Challenge	Strategy
<p><i>Standardising specialist fees, user charges and benefits</i></p> <p>Currently insurance carriers offer different arrangements for accessing and paying for healthcare.</p>	<p>Standardisation of arrangements will be required, however, it should be phased in over a period of time (e.g. 5-10 years). This will provide the insured population and carriers' time to adjust.</p>
<p><i>KFA competencies</i></p> <p>Unlike other insurance carriers, KFAs are governed by the Länder and do not form part of the HVSV. KFAs also pay for all private expenditures, and in certain cases, pay in full for (non-contracted) physicians (Wahlärzte) (as opposed to the 80%).</p>	<p>KFAs under model 1 will have to form part of HVSV and operate under a similar law. Unlike the current KFA arrangement, employed health insurance will not fully reimburse patients who access non-contracted physicians.</p>
<p><i>Contribution base of SVB</i></p> <p>The contribute base for current SVB carriers differs from the SVA, with the farmers employing a non-income related base. Therefore, under the merge, the self-employed will be required to cross-subsidise.</p>	<p>This challenge could be addressed by either: changing the SVB contribution base so that it is fairer; or using efficiency gains from the consolidated organisation to subsidise the low contribution base from SVB insured population.</p>
<p><i>Administration cost the BKKs</i></p> <p>BKK administration costs are currently borne by companies</p>	<p>The administration costs of BKKs would need to be shifted to the health insurance carrier and away from companies. However, overall savings in</p>

Challenge	Strategy
	administration through merging may counteract this additional administrative burden.

Variations

Model 1a

Model 1a mirrors model 1, with the exception that the national health insurance carrier for the employed would be split according to the Länder configuration. The branches may either sit under one national umbrella organisation, or operate as independent, autonomous carriers. Under this arrangement, risk-adjustment across the branches would need to be facilitated by one central agency for employed health insurance.

It could be argued that dividing the employed health insurance carrier into regions would strengthen cooperation within current State Health Funds, for example by extending existing coordination activities.

Model 1b

Unlike model 1a, model 1b would split the national health insurance fund for the employed into four healthcare zones (which incorporates 32 regions), as specified by the Austrian Structural Health Plan (Österreichischer Strukturplan Gesundheit, ÖSG):

- East: Northern Burgenland, Lower Austria and Vienna
- South: Styria, Carinthia and Southern Burgenland
- North: Upper Austria and Salzburg
- West: Tyrol and Vorarlberg.

By splitting carriers by healthcare zones, the planning of social health insurance would align with the Austrian Health Care Structure Plan (ÖSG). In addition, dividing insurance according to the configuration of the Länder risks increasing hospital utilisation, given the Lands are responsible for the provision of inpatient care (i.e. own, regulate and fund hospitals). Model 1b may also equalise the balance of power between social health insurance and the Länder, given one significantly large insurance carrier would negotiate with multiple Lands.

Model 1c

Model 1c differs from model 1 by jointly allowing the SVA and SVB to operate all three insurance pillars, as opposed to just health. Under the status quo, both carriers offer services beyond health insurance, with the SVA providing health and pension, while the SVB offers all three types of insurance.

Legal considerations

Model 1 and 1a

With respect to models 1 and 1a, certain legal challenges occur, however, most of these challenges can be addressed with simple legislative acts (i.e. no requirements of a two-third majority). Specifically, due to the self-governance-principle, as it is understood in the case-law by the Constitutional Court, amalgamation of employed and civil servants schemes as well as those for self-employed and farmers is possible if the system of collecting contributions is harmonised and (at least: or) separate groups ('curias') of insured persons are formed within the respective self-governance bodies (for details see below Volume 2, chapter 5).

Under such a common umbrella institution, the provision of services by physicians and other medical staff and the administration could be organised together. But as those curias (according to the self-governance-principle) must be authorised to release their own regulations (such as 'Satzungen' or Krankenordnungen') this could be contradictory to the goal of harmonization of risks and benefits.

Incorporation of the KFAs, however, would require either corresponding legislation by the regional Parliaments (Landtage) or amendments to Federal Constitution which would be subject to two-third-majorities in both chambers of the Federal Parliament (for details see below Volume 2, chapter 5.2.3.).

Model 1b

From a legal point of view, model 1b would cause constitutional problems (only) with respect to regulations for hospitals. Under the current Constitutional system, the Federal Parliament is authorised only for ruling "principles" of hospital law whilst the Regional Parliaments are competent to pass more detailed implementation regulations which are applicable, however, only to the respective Land and therefore not applicable to entities (such as these "healthcare zones") covering several Länder.

With respect to amalgamation of GKKs and BVA respective SVA and SVB and the incorporation of the KFAs the same applies as explained regarding Model 1.

Model 1c

Implementation of model 1c would require harmonisation of benefits (for details see below Volume 2 chapter 5.3), as well as harmonisation of policies regarding collections of contributions between the SVA and SVB.

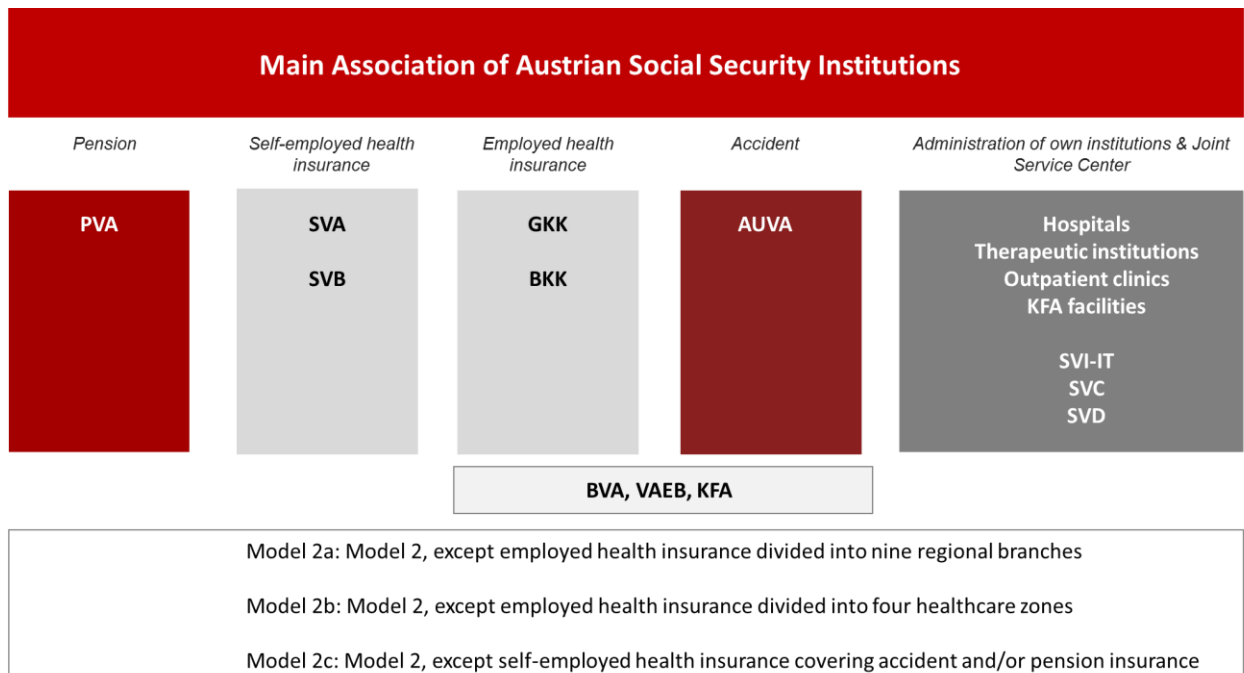
Model 2: Limited amalgamation

Description

Model 2 would create one national insurance pillar for pension and another pillar for self-employed health insurance. In addition, GKKs and BKKs would amalgamate to form a significantly sized employed health insurance carrier. Unlike model 1, model 2 would create a new health and accident insurance carrier for civil servants, that is, the BVA, VAEB (of which 53% are active civil servants (including dependents)) and KFAs. Regarding accidents, those not covered by the civil servant carrier would receive insurance from AUVA.

Lastly, similar to model 1, own institutions run by insurance carriers would be managed by one central agency to enhance efficiency and coordination.

Figure 51: Structural model 2



Rationale

The BVA, VAEB and KFAs would establish a new health and accident insurance carrier given their insurees are a relatively homogenous group. The rationale for this separation is that these carriers may, in the short-run, be more challenging to amalgamate given they currently offer extended benefits and greater access to physicians. Given civil servants have favourable risk profiles, the BVA, VAEB and KFAs would be required to participate in a risk-adjustment scheme with the employed health insurance carrier. The risk-adjustment scheme would be monitored by a central agency governing all relevant health insurance carriers (i.e. all except self-employed).

Finally, relative to the status quo, model 2 would create larger risk pools thus improving efficiency and equity, increase economies of scale, foster knowledge specialisation and promote joint procurement.

Challenges

Implementing model 2 is associated with challenges outlined under model 1. The added challenge of model 2, is to ensure a robust risk-adjustment mechanism between the employed health insurance, and the civil servants is implemented so that the employed health insurance carrier is not put at a disadvantage.

Variations

Model 2a

Similar to model 1a, under model 2a, employed health insurance (GKKs and BKKs only) would be divided according to the Länder. The branches may sit under one umbrella organisation or operate as independent, autonomous carriers. Risk-adjustment between the Lands and between the civil servant carrier would be facilitated by one central agency.

Model 2b

Unlike model 2a, model 2b would create four branches or independent employed health insurance carriers based on the healthcare zones. Risk-adjustment would be required across the healthcare zones, and between the civil servants and employed health insurance carrier.

Model 2c

Model 2c would maintain the same arrangements under model 2, however, the self-employed health insurance would also cover pension and/or accident insurance. For example, implementation could be step-wise by first offering pension and health (given this falls within current SVA and SVB remits), and later extended to accident insurance.

Legal considerations

Model 2

With respect to Model 2 the same legal issues as those posed by model 1 apply. Amalgamation of schemes for all self-employed is possible as far as the system of collecting contributions are harmonised and (at least: or) separate groups ('curias') of insured persons are formed within the respective self-governance bodies. The problem concerning incorporation of the KFAs remains.

Model 2a

From a legal point of view the same applies as explained with regards to model 1.

Model 2b

With respect to Model 2b the same problems with respect to regulations for hospitals would have to be faced as already explained regarding model 1b.

Model 2c

From a legal point of view the same applies as explained with regards to model 1c.

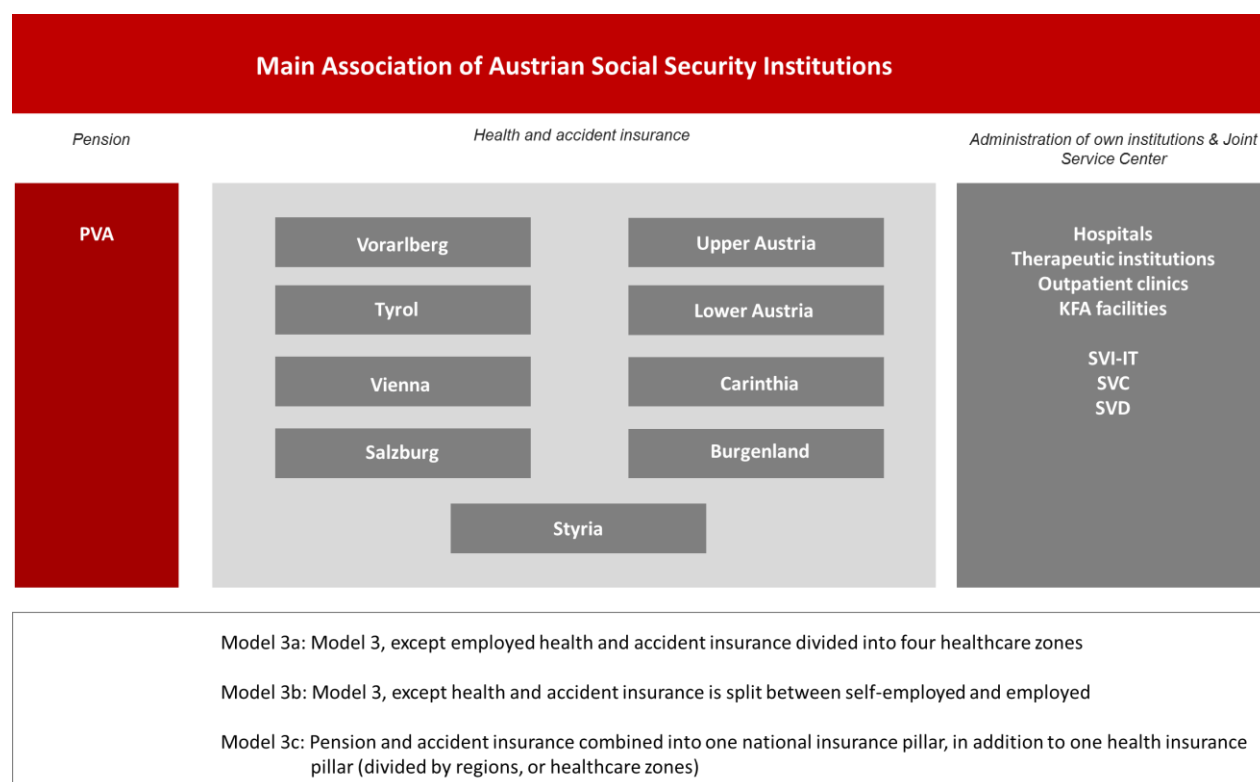
Model 3: Health and accident amalgamation

Description

Model 3 would create one national pension insurance carrier, and nine regional insurance carriers offering both health and accident insurance. The nine regional carriers may operate under the one umbrella organisation as branches, or as independent, autonomous carriers.

Similar to models 1 and 2, owned institutions would be managed and administered by a central agency.

Figure 52: Structural model 3



Rationale

As is the case in models 1 and 2, model 3 enlarges the risk pool, enhances joint procurement, and fosters knowledge specialisation. For example, by combining the employed and self-employed, funds will automatically be risk-adjusted given high- and low-risk individuals are pooled into one carrier. Nevertheless, given differences across states, a formal risk-adjustment mechanism across the nine health and accident insurance carriers would be required.

Challenges

Implementing model 3 is associated with challenges outlined under model 1. In addition, there is limited synergies, in terms of services, between health and accident given health is increasingly focused on prevention, while accident insurance concerns patients who are already injured and therefore require specific healthcare and rehabilitation. Further, splitting AUVA into regions or healthcare zones may be counterintuitive and unnecessarily increase administrative costs (i.e. diseconomies of scale).

Variations

Model 3a

Model 3a would separate employed health and accident insurance into healthcare zones, which would also require a robust risk-adjustment mechanism.

Model 3b

Under model 3b, health and accident insurance would be further split according to employment status, that is, by employed and self-employed.

Model 3c

Model 3c would instead amalgamate pension and accident insurance into one national insurance pillar. This would avoid splitting national insurance into branches based on Länder configurations. Health insurance would be provided by one insurance pillar, which would be split according to regions or healthcare zones.

Legal considerations

Model 3

Amalgamation of health and accident insurance both of employed and self-employed would cause (constitutional) problems with regards of the principle of self-governance (different risks, different interests, and different representation of insurees) (for details see below Volume 2 chapter 5.2.2.).

Model 3a

With respect to Model 3a, the same problems with respect to regulations for hospitals would have to be faced previously explained under model 1b.

Model 3b and 3c

No constitutional problems have to be observed in this respect, but there are some actual concerns against 'splitting' of AUVA (see below Volume 2 chapter 10.3).

Model 4: Care coordination

Description

Model 4 maintains the current social insurance structure, including relevant legal entities, however, two additional changes are made. First, a risk-adjustment system across all carriers offering health insurance would be implemented. Second, the role of current competence centres would be enhanced and renamed as Joint Specialist Centres. A number of Joint Specialist Centres would be created, each providing a defined set of services designed to improve the efficiency of the overall social health insurance system.

A joint Working Group including representative from the HVSV, Ministry of Health and Women's Affairs, and the Ministry of Labour, Social Affairs and Consumer Protection, would be given responsibility for institutionalising Joint Specialist Centres by coordinating their development and implementation, and defining the list of 'specialties/themes' within each of the centres. To develop this list, a comprehensive mapping exercise could be undertaken to identify, a) areas of need, and b) complementary tasks/responsibilities, which could be bundled into a Joint Specialist Centre.

Once the Working Group have defined a list of specialties/themes and their associated services, individual social health insurance carriers must negotiate among themselves which carrier will take responsibility for each Joint Specialist Centre.

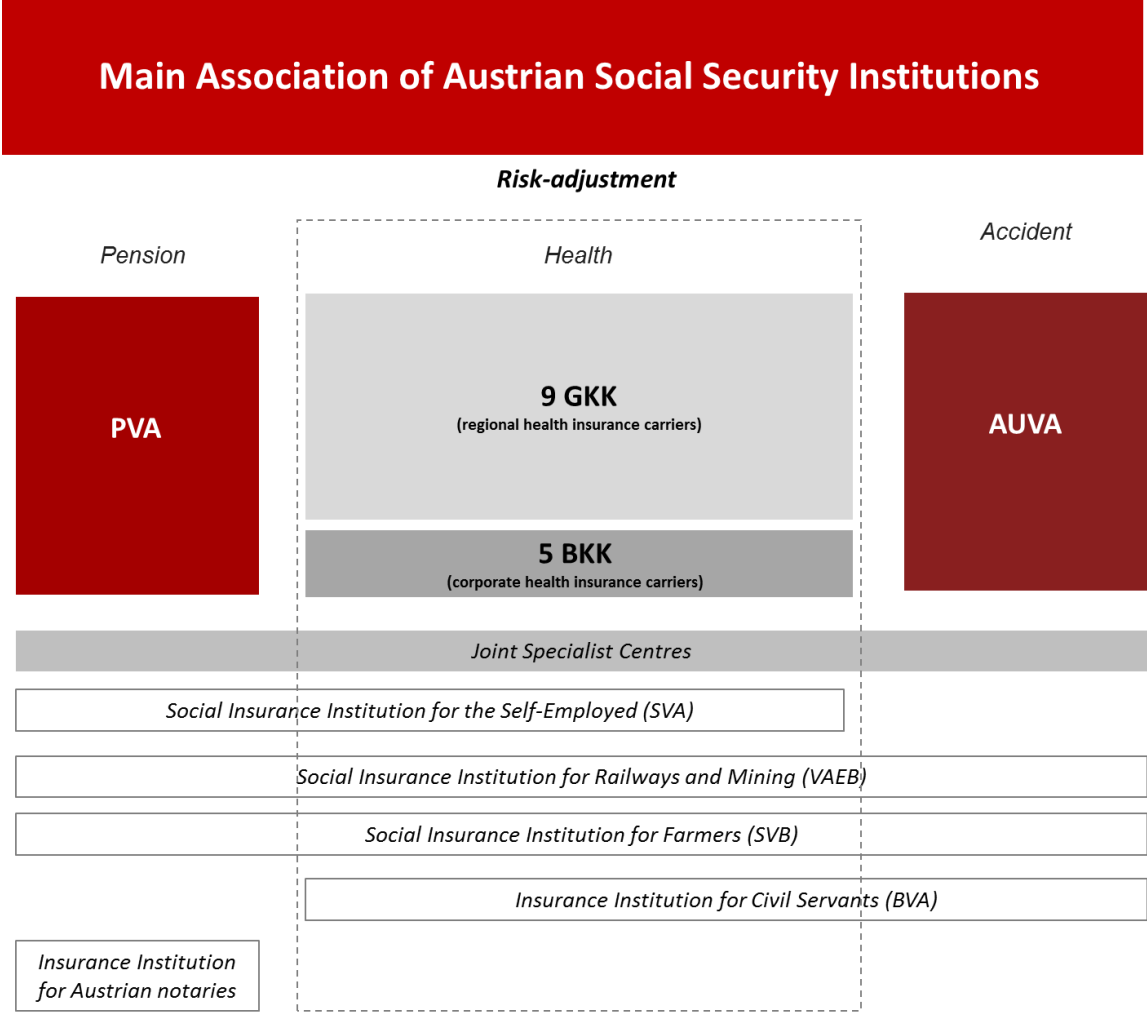
A preliminary list of specialties/themes for Joint Specialists Centre has been outlined below, and could be used as the basis for further discussions within the HVSV:

- Collection and auditing of contributions
- General legal matters
- Joint procurement
- Business management (e.g. accounting, payments)
- Performance optimisation
- Management of contractual partners (increasing bargaining power of the social insurers, and harmonising benefits)
- Specific healthcare treatment (e.g. dental health centres, rehabilitation facilities).

Under this model, it is necessary to define a proportion of costs (for example, as a proportion of contributions paid) that each carrier must dedicate to their respective centre. If this amount is not specified, it is likely that some, if not all, carriers would dedicate very little, thus minimising potential efficiency gains. The dedicated amount of cost could also fall within the remit of the Working Group.

Lastly, to incentivise participation in the scheme, take-up and subsequent participation within Joint Specialist Centres should be independently evaluated within the short-term. If results from the evaluation determine health insurance carriers were unable to derive maximum efficiency and coordination benefits associated with model 4, models 1, 2 or 3 could be considered. Alternatively, changes to the law could be introduced, which require carriers to actively participate (e.g. by specifying a minimum proportion of costs to be dedicated to Joint Specialist Centres).

Figure 53: Structural model 4



Rationale

The primary rationale for model 4 is the introduction of a comprehensive risk-adjustment mechanism across carriers offering health insurance (see section 4.2.7 for the five potential risk-adjustment options

under this model). As a result, health insurance carriers will have similar financial means and therefore be able to offer their insured populations the same benefits. Further, fostering inter-carrier cooperation can counteract inefficiencies and eliminate unnecessary costs caused by duplication.

Several advantages are associated with the proposed Joint Specialist Centres. Most importantly by:

- Enhancing and providing incentives to promote Joint Specialist Centres fosters an environment where further efficiency gains can be realised
- Giving responsibility for coordinating the development and implementation of Joint Specialist Centres to a Working Group minimises duplication within the system, thus improving overall efficiency
- Assigning social health insurance carriers with responsibility for a specific specialty/theme fosters specialisation, which again promotes efficiency within the system.

Challenges

In regard to model 4, a key challenge will be for carriers to allocate responsibility for Joint Specialist Centres, for example, powerful health insurance carriers may in fact define how all centres are allocated. As a result, carriers who have been allocated less desirable Centres may refuse to actively participate.

Although not a challenge, one significant disadvantage of model 4, relative to all other models, is the exclusion of the KFAs from the social security system.

Legal considerations

From a legal point of view, the main legal challenges arising from model 4 regards the proposed risk-adjustment mechanism. According to the case law ruled by the Constitutional Court, a mechanism aiming to compensate risks between different institutions and groups does not violate constitutional principles as long as there is a 'sufficient personal and material link' between the respective 'Versichertengemeinschaften'. A sufficient link in this respect can be assumed the more, the less differences can be identified with regards to contributions and benefits (including the framework of contractual partnership law) of the respective scheme. Without a sustainable withdrawal or even elimination of those differences (that could be achieved by simple legislation without two-third majorities, though) there is no sufficient link so far between the GKKs and the BVA, nor between GKKs and SVA or between SVA and SVB.

A risk adjustment scheme covering all carriers would meet the requirements under Constitutional Law only insofar as structural disadvantages can be proofed in an evidence-based way (and are not caused

only by regional disparities which are already compensated within national-wide carriers themselves). Otherwise a risk adjustment schemes could be implemented only by an amendment to Federal Constitution (i.e. only with a two-third majority). Nevertheless, a risk adjustment (mainly) based on taxes would be possible from a legal point of view (s below 4.2.7. and Volume 2 chapter 8.).

As long as participation in these Joint Specialist Centres is not compulsory there are no legal impediments at all. Legally binding participation, however, could cause constitutional problems with respect to the principle of self-governance. That would not be the case as far as legislation is only defining targets and that particular way of cooperation as a means to achieve these targets and as long as the carriers themselves (or their representatives in the respective bodies of the Hauptverband) decide which ones of them should run such a Centre and which ones would merely participate.

4.2 Risk-adjustment mechanisms

Enhanced risk-adjustment is a key motive for restructuring Austria's social security system, given its impact on both efficiency and equity. This section explores risk-adjustment in more detail, including case studies from a range of healthcare systems in Europe. Findings from the analysis have been used to inform policy options aimed at improving current methods of redistributing funds across health insurance carriers.

4.2.1 Resource allocation methods

There exist numerous financing mechanisms to fund healthcare systems across Europe, including general taxation, local taxation, compulsory insurance and voluntary insurance. Despite this, all systems have one thing in common, that is, to devolve responsibility of purchasing healthcare to numerous 'health care plans' (73). In England, for example, over 200 Clinical Commissioning Groups (CCGs) are responsible for purchasing care, while in social health insurance systems, responsibility lies with various sickness funds (74).

Austria, similar to other countries, has multiple healthcare purchasers, including individual social health insurance carriers. However, the country is unique in that responsibility for purchasing care is split according to the type of care being provided (i.e. social health insurers purchasing primary care, and outpatient care, including pharmaceuticals, while the Länder purchase inpatient care, social care and associated medicines). Austria also distinguishes itself from other countries in regard to risk-adjustment

for resource allocation. Specifically, the current risk-adjustment across carriers is minimal (see section 4.2.6), and does not incorporate all carriers within the system.

A decision must be made on how to allocate pooled funds to various devolved purchasers in a way that meets health system objectives, namely, efficiency and equity. Allocation of funds can generally be grouped into one of the following three categories: a) full retrospective reimbursement for healthcare expenditure; b) activity-based reimbursement based on a pre-determined fee schedule (e.g. DRGs); and/or c) via a prospective budget based on expected healthcare expenditure (73). Increasingly governments have moved towards prospective budgets, given it lowers risk by fixing their funding commitment (see Table 5 for further details) (73).

Table 5: Risk associated with different resource allocation methods

	Full retrospective reimbursement	Activity based reimbursement	Prospective budget
Pooling agency	High risk	Medium risk*	Low risk
Purchaser	Low risk	Medium risk*	High risk
Funding commitment	Uncertain	Uncertain	Fixed

Note: *Risk for agency in terms of volume, and risk for purchaser in terms of case severity.

4.2.2 Methods to redistribute funds

Pooling agencies who pay purchasers prospectively must decide on a method by which to allocate funds. As outlined by Rice and Smith (2002), there are four methods of reimbursement, all of which are outlined in Table 6, along with potential implications.

Table 6: Methods to set prospective budgets and aligning implications

Reimbursement method	Implications
Size of bids from purchasers	Purchasers have an incentive to inflate bids to receive greater funds.

Reimbursement method	Implications
Political negotiation	Vulnerable to political favouritism, with evidence showing this method is unsustainable in the long-term.
Historical precedent	This method is often viewed as arbitrary, further it does not encourage efficiency or take into account unmet need.
<i>Independent method to measure need</i>	<i>Increasingly scientific methods are being used to measure the level of need. Namely in the form of capitated budgets.</i>

Source: (73)

Scientific methods to measure the level of healthcare need are common across developed healthcare systems, primarily in the form of capitated budgets. Capitated budgets pay purchasers a prospective flat rate fee, to cover specific services for a fixed population, over a defined period (i.e. place a cost on the head of each individual covered, subject to an overall budget constraint) (73). Given healthcare needs differ significantly across groups, the amount of funds allocated to each purchaser must also differ, that is, pooling agencies must redistribute funds based on relative need (i.e. risk-adjustment) (73).

4.2.3 Risk-adjustment factors

As stated by Juhnke *et al.* (2016), the 'basic principle' of risk adjustment is to classify key healthcare risks, and compare the level of risk across different groups in order to forecast future expenditure (75). Despite the existence of various risk-adjustment models across countries, the aforementioned authors were able to identify a set of common indicators, which include, for example, age, gender, diagnosis, disease severity, disability status and employment status.

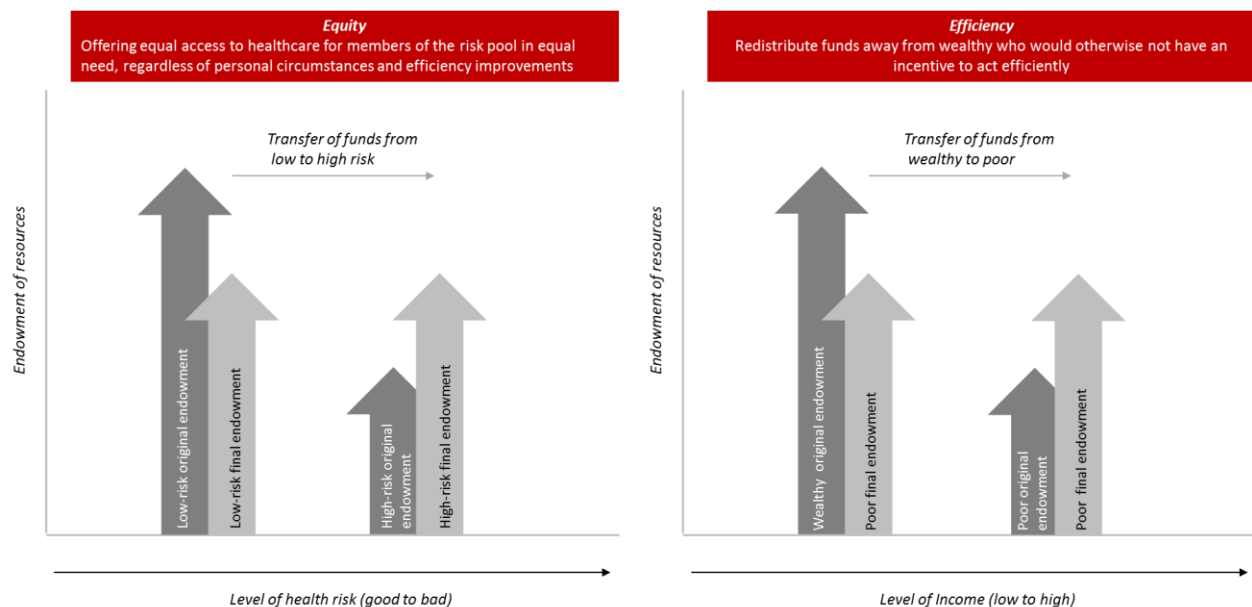
It is important to note, that although methods to risk-adjust payments have advanced, their predictive ability is still low. As will be discussed in further detail within this section (international case studies), approximately 20% of the variation in risk-adjustment factors can explain variations in individual healthcare expenditure (76). As a result, risk-adjustment mechanisms lead to systematic under and over payments to certain groups in society (76).

4.2.4 Impact of risk-adjustment on health system objectives

Equity and efficiency

Pooling, and the subsequent risk-adjusted distribution of funds, plays a key role in achieving health system objectives, namely, *equity* and *efficiency* (see figure below). Specifically, risk-adjustment can improve equity considerations by spreading the risk associated with healthcare expenditure across a diverse range of people. This allows equal access to healthcare, regardless of the individual's risk profile (76). Risk-adjustment promotes efficiency by redistributing funds held by insurance carriers with favourable risk profiles, to funds with unfavourable risk profiles. Transfers of funds between carriers fosters a 'level playing field', which can improve overall population health (76). For example, additional funding to carriers with unfavourable risk profiles will reduce the probability of insurees delaying or forgoing treatment, which lead to worse health outcomes and high long-term expenditure (76).

Figure 54: Impact of risk-adjustment on efficiency and equity



Source: Largely adapted from (76)

Note: Dark grey arrows indicate initial endowment, while light grey arrows represent endowment after risk-adjustment.

Impact of risk pooling type on equity and efficiency²¹

The ability of risk-adjustment to achieve equity and efficiency objectives, however, depends on the type of risk pooling mechanism employed. As outlined by Smith and Witter (2004), risk pooling can be broken down into the following four categories: no risk pooling, unitary risk pooling, fragmented risk pooling and integrated risk pooling

No risk pooling

No risk pooling, in which patients are responsible for all healthcare costs, is associated with the highest level of individual uncertainty. In such circumstances, vulnerable groups receive no subsidy and are excluded from treatment if they cannot afford care. Patients can choose to purchase private health insurance to reduce uncertainty, however, in the absence of community-rated premiums, the elderly and/or sick are likely to be discriminated against and pushed out of the market. Further inefficiencies from this model arise from high transaction costs, for example, from collecting and calculating user charges (76).

Unitary risk pooling

Under unitary risk pooling systems, all funds, whether they be collected through general taxation, social insurance or user charges (for example), are pooled into one central fund. The central fund is then responsible for purchasing healthcare to meet the demands of the population. Such a system overcomes many of the equity and efficiency concerns that arise from systems with no risk pooling (76).

Notwithstanding comments outlined above, unitary risk pooling is not without its faults. Specifically, there is an incentive for supplier-induced demand (SID), which may lead to differences in benefits packages, thus having a negative impact on equity principles. Further inefficiencies arise from moral hazard whereby patients consume more than is necessary, given the economic barrier of price is removed. Lastly, unitary risk pools remove individual choice which reduces competition, and prevents individuals from accessing benefits they are willing to pay for (76).

Fragmented risk pooling

Unitary risk pools, when too large, are associated with managerial control and coordination problems. Therefore, as outlined above, responsibility for purchasing healthcare is usually devolved to numerous

²¹ This section was largely taken from Smith & Witter (2004). *Risk Pooling in Health Care Financing: The implications for health system performance*. HNP Discussion Paper. September 2004.

organisations. As a result, fragmented risk pools are created. Risk pools may be designated according to geographical location, employment status, personal characteristics (e.g. health or age), or may be voluntary, as is the case in competitive insurance markets. Variations will therefore exist across risk pools, however, is inversely related to the size of the risk pool. That is, a system with a large number of small risk pools is associated with high variations in spending compared to a small number of large risk pools (76).

Variation in expenditure across risk pools can negatively impact both efficiency and equity if not corrected for. For example, in competitive insurance markets, differences in risk will result in higher premiums for groups with a higher proportion of sick/elderly (76).

Integrated risk pooling

As outlined above, pure fragmentation can lead to significant differences across groups, which negatively impact efficiency and equity. In response, many systems now enforce financial transfers between risk pools to reduce or eliminate high levels of variation (76).

Two operational models for integrated risk pooling exist. First, a central agency can collect and redistribute pooled funds to risk pools based on expected healthcare expenditure. Or second, risk pools continue to collect revenues, who are then responsible for redistributing funds from low to high risk pools (76).

In regard to equity considerations, this type of pooling may allow risk pools with high levels of employment and a low number of non-earning dependents to charge relatively lower premiums. If rejected on equity grounds, another transfer will be required to take into account differences in the revenue base of risk pools (76).

Table 7: Types of risk pooling

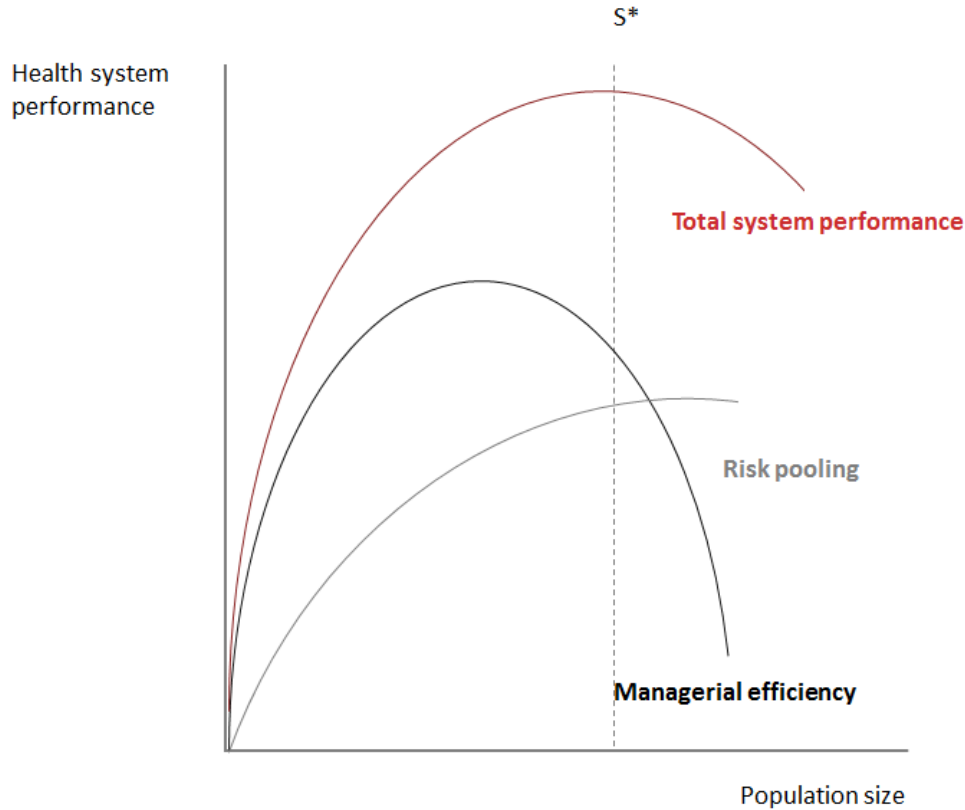
Type	Magnitude of uncertainty	of	Impact on efficiency	Impact on equity
No risk pooling	Very high		Cream skimming Transaction costs	Discriminates vulnerable groups
Fragmented risk pooling	High		Competitive market breaks down without corrective action	Competitive systems can lead to variations in premiums

Type	Magnitude of uncertainty	Impact on efficiency	Impact on equity
Integrated risk pooling	Medium	Second set of transfers needed to account for differences in revenue base	Differences in premiums across risk pools
Unitary risk pooling	Low	Supplier induced demand Moral hazard Reduced competition Denying benefits that patients are WTP for Difficult to control and coordinate	Distributes funds from healthy/wealthy to the poor/sick Differences in benefits packages

Source: (76)

A move from no risk pooling to unitary risk pooling is associated with gains in equity. However, gains in equity must be traded against efficiency losses (see figure below). For example, unitary risk pooling can redistribute funds from the sick/poor to the healthy/wealthy, however, such systems are associated with supplier-induced demand, moral hazard and problems with managerial efficiency. Ultimately, however, the optimal size of the population is dependent on country-specific circumstances and preferences (76).

Figure 55: Trade-off between equity and efficiency in risk pooled systems



Source: Taken directly from (76)

4.2.5 International case studies: Risk-adjustment

Risk-adjusted capitated budgets come in many forms across healthcare systems, however, they can largely be separated into two categories: territorial and non-territorial. In general, the former relates to instances where national funds are distributed to geographically defined purchasers of care, while the latter, concerns redistribution of pooled funds to various insurance agencies (either in competitive or non-competitive markets) (see Table 8).

Table 8: Types of risk-adjusted capitated budgets

Type	How?	Why?	Example*
Territorial	Redistribution of nationally pooled funds to regional bodies	Ensure resources are distributed in a way	UK Sweden

Type	How?	Why?	Example*
	based on assessment of need	that secures equitable access to care	Spain Finland
Non-territorial (competitive model)	Redistributes funds from plans with lower-risk enrollees to plans with higher-risk enrollees	Protect against risk segmentation and selection	<i>Germany</i> <i>Belgium</i> <i>Netherlands</i> <i>Switzerland</i>
Non-territorial (non-competitive model)	As above	Ensure resources are distributed in a way that secure equitable access to care	<i>Austria</i>

Note: *Italicized countries are described in further detail in the following section.

Territorial risk-adjustment

England

Resource allocation methods have existed in England since the 1970s in order to address disparities in funding and healthcare needs across regions (77). Starting from 2002, as a way to reduce avoidable health inequalities, a deprivation adjustment was included in a risk-adjusted formula which determined the level of funding each Primary Care Trust (up until 2013, responsible for purchasing a range of healthcare services) received (i.e. poorer areas received larger budgets). Primary Care Trusts were later replaced by Clinical Commissioning Groups, who received risk-adjusted capitated payments (77).

The structure of England's healthcare services changed significantly under the *Health and Social Care Act*. The Act, which was introduced in 2012, aimed to separate the government from the day-to-day running of the NHS (78). Specifically, under new arrangements, the Department of Health transfers a lump sum of money (approximately £95 billion a year) to NHS England, an arm's length body that is held to account through annual mandates with the Secretary of State (78).

NHS England devolves responsibility for purchasing secondary and community care healthcare services to over 200 Clinical Commissioning Groups (CCGs) across the country (see Figure 56 for further details). Given CCGs work at the community-level and are led by healthcare professionals (namely GPs), they are seen to be in a strong position to purchase healthcare that meets the needs of their designated population (79).

Figure 56: Clinical Commissioning Groups (England)

Purpose and coverage

CCGs are responsible for purchasing healthcare services such as mental health, urgent and emergency care, elective hospital services and community care. Each CCG covers between 100,000 to 900,000 people, with an average of 250,000. Coverage is based on GP practice lists.

Leadership

CCGs are led by an elected body of GPs, and other clinicians such as nurses and lay members of the community.

Funding

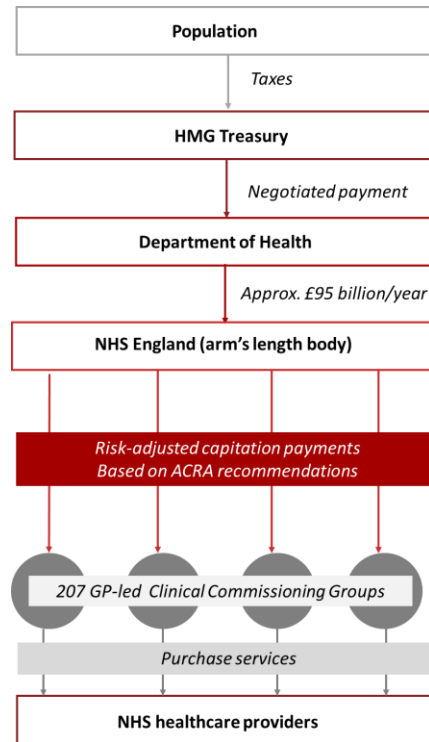
Receive risk-adjusted capitated budgets from NHS England. Funding for CCGs comprises two-thirds of the NHS budget. Budgets are set for five years, the first three of which are firm, and two which are indicative.

Number

There exist 207 CCGs as of 2017.

Source: (2)

Figure 57: Paying and purchasing healthcare in England



Source: Author's own creation

The latest funding allocation to CCGs was determined by the NHS England Board in December 2015 (2016-2021). Allocations made to each CCG are based on advice from an independent, expert technical committee (i.e. Advisory Committee on Resource Allocation, ACRA), which comprises GPs, academics, NHS managers and public health experts (80).

Once a national budget for healthcare has been determined, the following four steps are taken to calculate the amount of funds received by each CCG:

1. Determine the target allocation for a CCG based on need and unavoidable cost (explained further under 'factors')
2. Establish a baseline, which amounts to the previous year's allocation in addition to any adjustment payments
3. Calculate the difference between target and baseline figure
4. Determine how far each CCG has moved from their target allocation (point 1 above) each year (i.e. pace of change policy).

Target allocations (point 1 above) for each CCG are determined through a weighted capitation formula which is based several factors, as outlined in Table 9.

Table 9: Weighted capitation factors for England's CCGs

Risk-adjustment factor	Description
Size	Takes into account the number of individuals within the GP practice list (projections are made for future numbers).
Age and gender	Takes into account age and gender to reflect that young and old have different health needs, as do men and women.
Factors 'over and above' those relating to age and gender	Additional adjustment to take into account relative need that goes beyond age and gender.
Unmet need and health inequalities	Assesses need on current NHS services, however, this omits unmet need. Therefore, there is an additional payment based on population health (standardised mortality rate for those aged 75 years and under).
Location	Market Forces Factor to take into account that the provision of healthcare services is more expensive in certain areas (e.g. London). Also an additional payment for providing emergency ambulance services in sparsely populated areas, and operating A&E departments in remote hospitals.

Source: (80)

Non-territorial risk-adjustment

Non-territorial risk-adjustment schemes are common within European social insurance systems, including Belgium, Netherlands, Switzerland and Austria. An overview of each of these models, including proportion of insurance funds that are risk-adjusted, responsible agency, and the type of risk-pooling is provided in Table 10. Further details on each of these models is provided thereafter.

Table 10: Overview of non-territorial risk-adjustment mechanisms in European social health insurance systems

Country	Factors	Proportion of insurance funds risk-adjusted	Responsible agency	Premium rate restrictions	Type of risk pooling
Belgium	Gender, age, unemployment, mortality, invalidity, urbanisation, income, and dependent persons	30%	National Institute for Health and Disability Insurance	Yes	Integrated
Germany	Morbidity, age and gender	100% of contributions	Federal Insurance Authority	Yes	Integrated
Netherlands	Age, gender, income, region, drug consumption, socioeconomic status, mental care, and previous medical costs	50% of payments made to health insurers	National Institute for Healthcare	Yes	Integrated
Switzerland	Age, gender, prior hospitalisations and pharmaceutical expenditure	100% outpatient, 50% inpatient	Common Institution	Yes	Integrated
Austria	Age, gender, and high-cost medical expenses	1.64% of income from contribution (GKKs only)*	Main Association of Austrian Social Security Institutions	Yes	Mixed of fragmented and integrated (GKKs)

Source: See descriptions below. Note: *Main source of risk-adjustment within the system, other compensatory mechanisms also exist.

Belgium

Risk-adjustment was introduced into the Belgium healthcare system in 1995, prior to this, all sickness funds were fully reimbursed for their costs (81). Since 1995, sickness funds have been financially responsible for 25% of any discrepancy between actual spending and budget allocations, of which 30% is determined according to a risk-adjusted allocation (82).²²

Similar to the Netherlands, Belgium has an external subsidy risk-adjustment system. Under this system, the insured population pay a small flat-rate premium directly to their desired insurer, as well as an income-dependent contribution. Unlike the flat-rate premium, income-dependent contributions are pooled by the National Institute for Health and Disability Insurance (INAMI-RIZIV) (hereafter, Central Fund), which is a government agency responsible for organising and managing healthcare insurance (83). Monies within the Central Fund are redistributed to sickness funds, and can be separated into two groups. The first type of payment is a normative, risk-adjusted payment, while the second payment is a retrospective payment based on actual expenditure (84). The weight allocated to the risk-adjusted payment was originally set at 10%, with plans to increase its value to 40%.

Factors included within Belgium’s risk-adjustment model for both the employed and self-employed are outlined in the table below.

Table 11: Risk-adjustment factors in Belgium

Employed	Self-employed
<p>Active population:</p> <ul style="list-style-type: none"> Gender, age, unemployment, working in the public sector, mortality, invalidity, urbanisation (density), and urbanisation (quality of housing) <p>Invalids:</p> <ul style="list-style-type: none"> Number of dependent persons, mortality <p>Pensioners:</p>	<p>Active population:</p> <ul style="list-style-type: none"> Number of dependent persons, income, mortality, urbanisation (density), urbanisation (quality of housing) <p>Invalids:</p> <ul style="list-style-type: none"> Age, income <p>Retired:</p>

²² Information sourced directly from National Institute of Health and Disability Insurance in Belgium.

Employed	Self-employed
<ul style="list-style-type: none"> Number of dependent persons, mortality, urbanisation (quality of housing) 	<ul style="list-style-type: none"> Age, number of dependent persons, urbanisation (density)
Widowers and orphans:	Widowers and orphans:
<ul style="list-style-type: none"> Age, mortality 	<ul style="list-style-type: none"> Age, mortality

Source: (84)

Schokkaert *et al.* estimated the predictive ability of Belgium’s risk-adjustment model to determine actual expenditure by sickness funds (85). Estimation results using the risk-adjustment model since 2008 found that 40% of the variation in expenditure can be attributed to variations in the risk-adjustment factors used in the model.

Germany

Risk-adjustment was introduced into the German social health insurance system in 1994, which adjusted payments to sickness funds based on age, gender, and invalidity pension status (in total, there were 670 mutually exclusive ‘risk’ cells) (86,87). Three main reasons were cited for the introduction of a risk-adjustment scheme, which are: a) to ensure fair competition among sickness funds by equalising risk structures; b) to equalise price differences across sickness funds; and c) to avoid risk-selection and adverse selection (88).

The original 1994 risk-adjustment scheme did not succeed as it was not able to compensate all sickness funds, given the high proportion of healthy, affluent people switching funds (87). The latest risk-adjustment scheme was introduced in 2009 under the *Act to Strengthen Competition in Social Health Insurance* (GKV-Wettbewerbstärkungsgesetz) (2007) (87,89). Specifically, the Act introduced the Gesundheitsfonds, hereafter, the Central Health Fund (CHF), which redistributes insurance contributions based on the sickness fund’s risk profile. The CHF is administered by Germany’s Federal Insurance Authority (Bundesversicherungsamt) (87,89).

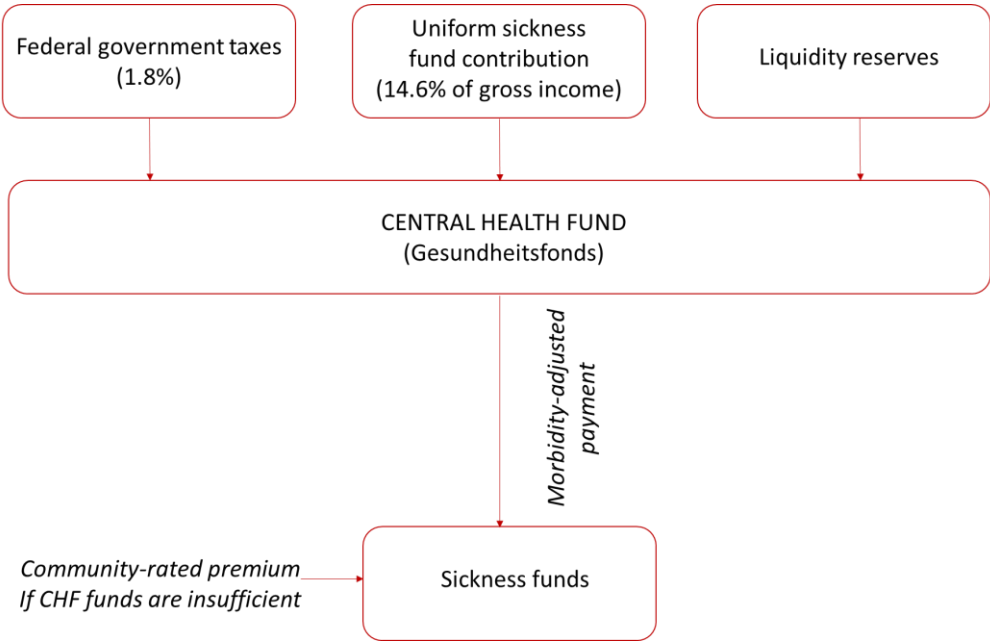
A major element of the Act to Strengthen Competition in Social Health Insurance was the change in how contribution rates are set. Specifically, the Act set, in law, a standard contribution rate (Social Code Book for Statutory Health Insurance), which is currently 14.6% of an individual’s gross income (split evenly

between employers and employees) (90). Previously, sickness funds were able to set their own contribution rate (91).

Sickness funds are responsible for collecting contributions, however, these payments are immediately transferred to the CHF (i.e. same-day transaction) (89). The CHF redistributes employer/employee contributions to the sickness funds according to a morbidity-based risk adjustment scheme (morbidityorientierter Risikostrukturausgleich (Morbi-RSA)) (see section below for further detail). If the funds provided by the CHF are not sufficient to cover the sickness fund’s expenses, funds must charge an additional flat-rate, community rated premium (i.e. a premium that is the same for all those insured, regardless of risk profile). Conversely, sickness funds can use excess handouts from the CHF to refund the insured, however, they are not legally obliged to do so (87,92). These supplementary premiums are collected directly by the sickness funds, and are thus associated with high administrative costs/effort (92).

In addition to contributions, the CHF receive payments from federal and state government taxes, specifically, 1.8% of taxes, and a liquidity reserve (89). However, these two payments are minor compared to contributions (92).²³ An overview of the German health insurance system is provided in Figure 58.

Figure 58: Overview of funding within the Germany Health Insurance System



Source: Adapted from (87)

²³ Tax subsidies and the liquidity reserves comprised approximately 12.7% of payments into the CHF as of 2011.

The payment sickness funds receive from the CHF can be broken down into four groups, which are outlined in Table 12.

Table 12: Breakdown of CHF payments to sickness funds (Germany)

Coverage	Risk-adjustment	Proportion of CHF payment
Standard benefits package	Yes	92%
Administration costs	Half of the payment is risk-adjusted (the other half is made per capita)	5.2%
Voluntary benefit package	No (flat-rate payment per capita)	Not specified
Incentive payment to participate in disease management programmes (DMPs)*	No (flat rate payment – approx. 150€)	Not specified

Source: (87)

Note: There exist DMPs for diseases such as diabetes, coronary heart disease, obstructive pulmonary diseases, breast cancer. DMPs are expected to improve the quality of healthcare received by the individual.

The CHF redistributes contributions based socio-demographic (i.e. age, gender, and invalidity of pensions) and morbidity-based criteria (Morbi-RSA) (91). To assist in developing an appropriate risk-adjustment, the government appointed a Scientific Advisory Board to assist in determining which 80 ‘severe’ or ‘costly and chronic’ diseases should be included in risk-adjustment calculations (87,89,91,92). A disease was considered eligible if the diagnosis exceeded the average per capita expenditure of all insured by at least 50% (the top 80 most expensive diseases were included in the risk-adjustment calculation) (87).

Buchner *et al.* (2013) undertook a study which calculated the ability of Germany’s risk-adjustment mechanism to predict expenditure by sickness funds. At the individual level, the authors conclude that the risk-adjustment scheme, introduced in 2009, had a predictive accuracy of approximately 20%. That is, 20% of the variation in factors used to risk-adjust payments (e.g. age, gender and morbidity) can explain

variations in individual level expenditure (93).²⁴ Specific figures on the performance of Germany’s risk-adjustment model have been provided in the table below. The figures have been taken directly from Buchner *et al.* (2013).

Table 13: Performance of Germany’s risk-adjustment model

	R² (%)	CPM (%)	MAPE (€)
Model, including sick pay	19.6	21.5	1,953
Model, excluding sick pay	20.2	22.5	1,817

Source: (87)

At the group level, the predictive power of the risk-adjustment mechanism is calculated using the ratio of the sum of CHF payments and the sum of expenditures for a group of insured people. An analysis of this ratio by the author’s revealed that the scheme leads to systematic underpayments to those in higher age groups, with multiple chronic conditions, and/or living in urban areas (87).

Given the risk-adjustment mechanism is not able to fully adjusted for differences in expenditure, a number of sickness funds have charged a supplementary premium, merged with other sickness funds or closed (92).

Netherlands

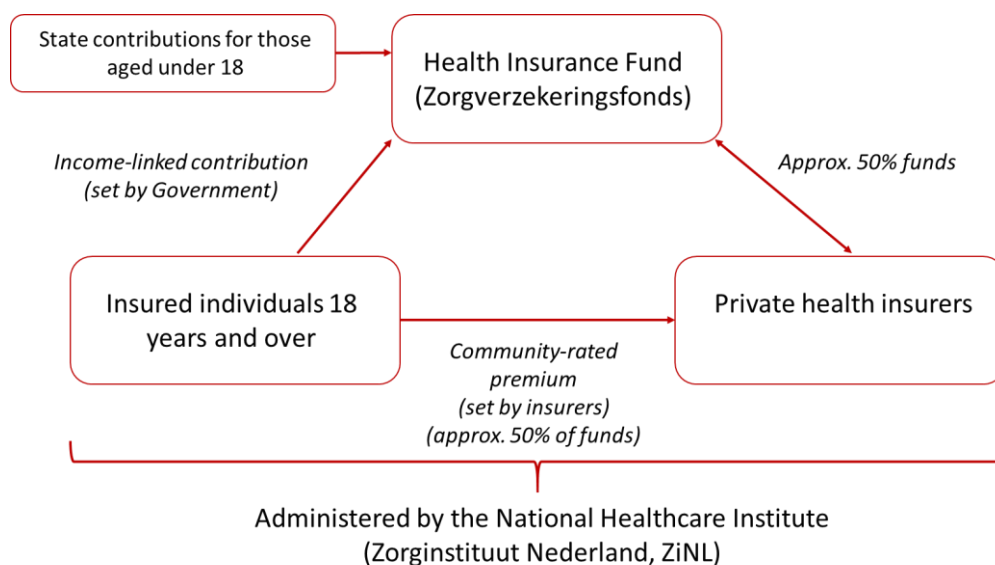
In 2006, the Dutch Government implemented the Health Insurance Act (*Zorgverzekeringswet*) which introduced regulated, privately managed health insurers in place of sickness insurance funds. Under new healthcare arrangements, a proportion of funds received by health insurers is risk-adjusted, to remove incentives for risk-selection (94,95).

²⁴ The new model had a CPM (Cumming’s Prediction Measure) of approx. 22% (closer to 100% indicates a better fit). The CPM is the proportion of the sum of absolute deviations from the mean in individual costs that is explained by the risk model.

Health insurers in the Netherlands receive their funds from three forms of payments. The first payment is a flat rate premium for those aged 18 years and over (6.65% and paid by employers in a central fund), the second is a contribution from the State to compensate for those aged under 18 years, and the third, is a community-rated premium paid directly by the individual (94,95).

Contributions from employers, the self-employed and state contributions for aged under 18 are pooled directly into the Health Insurance Fund (Zorgverzekeringsfonds).²⁵ The Health Insurance Fund is administered by the National Healthcare Institute (Zorginstituut Nederland - ZiNL), which is responsible for the quality, accessibility and affordability of healthcare in the Netherlands (96) (see Figure 59 for an overview of the SHI payment system in the Netherlands).

Figure 59: Overview of payment system to private health insurers (Netherlands)²⁶



Source: Adapted from (94)

Contributions, which are determined by the government, are set at a level so that approximately 50% of all funds received by health insurers are risk-adjusted, with the community-rated premium accounting for the remaining 50% (94,95).

²⁵ For the employed, employers are responsible for pooling funds into the Health Insurance Fund, for the self-employed it is the responsibility of the Tax and Customs Authority (Source: feedback from P. Jeurissen, 2017).

²⁶ The two-way arrow between the Health Insurance Fund and private insurers states that enrollees with very favourable health profiles will have lower expected costs than 50% of the nominal premium. Insurers who only enrol such people will have to refund part of their nominal premium to the Health Insurance Fund as a way to avoid cream skimming. However, this does not happen in practice (Source: feedback from P. Jeurissen, 2017).

As of 2017, all risk-adjustment payments are ex-ante, and are set prior to the calendar year. This provides insurers with an incentive to fund services within its financial means (i.e. community-rated premiums and risk-adjusted payments). The ex-ante contribution from the Health Insurance Fund is based on health expenditure of the insured based on their risk profile, less the estimated income from a calculation premium (not the same as the community-rated premium, as this would incentivise insures to lower premiums) and the mandatory deductible (set at €385 per annum). The factors used to estimate expenditure costs are outlined in the section below (94,95).

Up until 1st January 2017, a second retrospective payment to health insurers was made to account for non-observable changes in the risk profile of insured population (95). The payment was introduced as a way to reduce risk-selection in the case of a suboptimal risk adjustment system, however, it was gradually phased out to further encourage efficiency among insurers (94).

Risk-adjustment factors used within the Dutch system can be grouped into eight groups, all of which are outlined in Table 14.

Table 14: Risk-adjustment factors in the Netherlands

Risk-adjustment factor	Description
Age and gender	Those of older age have higher healthcare expenditures, as do women of birth-rearing age (20-40).
Income	Nature of income such as whether the individual receives social security payments, is salaried or is self-employed.
Region	Higher compensation is provided to those living in regions with a high proportion of non-western immigrants, above-average risk of mortality and low income.

Risk-adjustment factor	Description
Consumption of pharmaceuticals	Patients who use drugs for chronic diseases in an outpatient setting are considered to be at higher risk of excessive healthcare expenditure.
Chronic conditions	Chronic conditions, treated at the inpatient level, are divided into 13 categories. Individuals with one or more of these conditions receive greater compensation. Includes expensive DRGs, and excludes pharmaceuticals.
Socioeconomic status	Socio-economic status of individuals.
Mental care	Those living in a one-person household are considered at great risk of mental health issues, and require greater compensation.
Other	Use of medical aids, and high medical costs in previous years.

Drawing upon a range of previous research, van de Ven *et al.* (2015) estimated the incentive for risk selection within the Dutch health insurance market. This was measured through the extent to which the current risk-adjustment mechanism over- or under-compensated insurers for specific groups ‘for which no explicit risk-adjusters’ existed (93). Results from their analysis show that insurers are systematically over (under) paid for groups with favourable (unfavourable) risk profiles. As an example, for 18.9% of the study population who reported the worst score for health,²⁷ the insurer was undercompensated on average by €670 per person, each year. Conversely, for 68.5% of the study population who recorded no chronic condition, the insurer was overcompensated €152 per person, per year (93). A selection of exact results taken directly from van de Ven *et al.* (2015) are provided in the table below.

²⁷ Based on the SF-12 Health Survey (97)

Table 15: Average under or overcompensation per person and year within the Dutch health insurance market

Selected groups (poor or good health)	Under (over) compensation (per person and year)	Predictive ratio*	Reduction in under (over) compensation due to risk-equalisation
Worst score for physical health (poor)	-€670	0.85	-75%
At least one chronic condition (poor)	-€331	0.90	-80%
No chronic condition (good)	+€152	1.16	-66%
Highest education level (good)	+€142	1.10	-61%

Source: (93)

Note: *Predictive ratio is calculated by dividing average predicted expenses over average actual expenditures. Thus, a predictive ratio less (greater) than 1 indicates under (over) compensation.

Switzerland

In general, Mandatory Health Insurance (MHI) premiums differentiate between cantons and are community-rated. Nevertheless, the old and sick have higher premiums when compared to the young and healthy. Hence, risk adjustment is needed in Switzerland to avoid the risk selection of the individuals by MHI companies.

Switzerland introduced risk-adjustment into its social health insurance system in 1993, with minor alterations made to the model in 2011 (98). Until the end of 2011, the risk-adjustment formula only considered age and gender. There were 15 different age groups and two gender categories resulted in 30 age and gender categories. The financial flows from the Common Institution to MHI companies do ensure that per insured person, within one of those categories, the available resources are the same across MHI

companies within the same canton. Unlike in the Netherlands and Germany, the risk-adjustment model in Switzerland is 'internal' in that it is not subsidised by additional government funds (98).

MHI companies in Switzerland collect the majority of their funds through community-rated premiums (i.e. premiums are the same within each MHI company, within a particular canton²⁸ or sub-region) (99). MHI companies that have favourable risk profiles (e.g. younger and/or wealthier) are required to transfer funds into a pool of funds, which is administered by the Common Institution (a foundation that that is predominantly financed by MHI companies, and to a lesser extent, the federal government) (99).

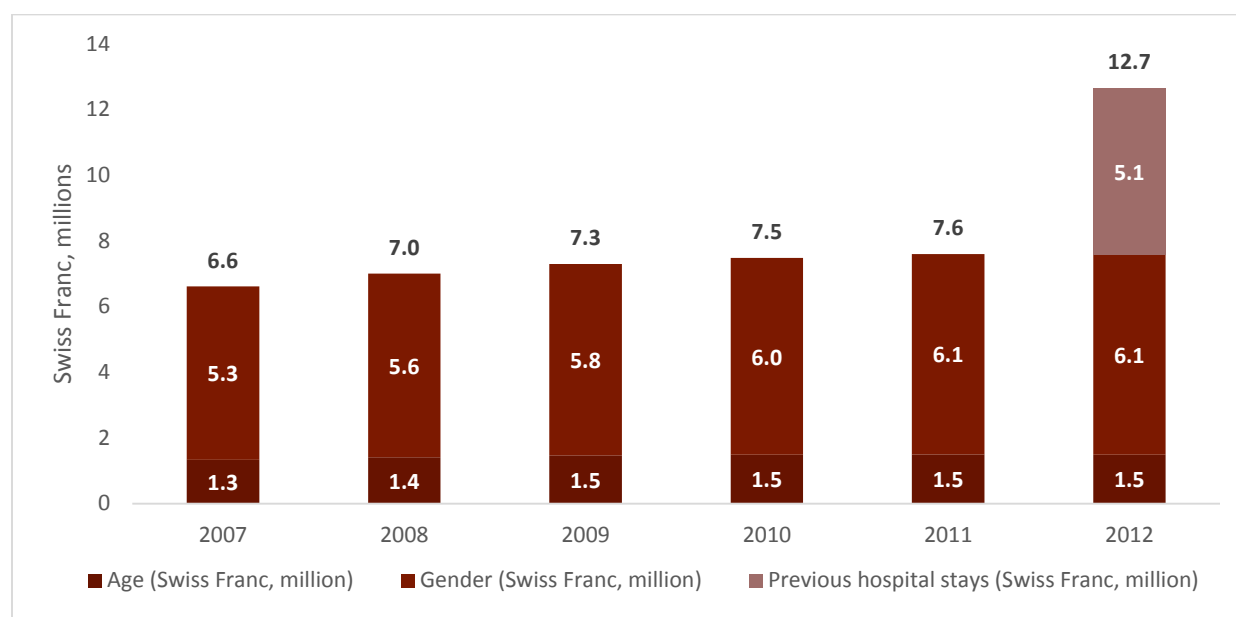
Funds within the Common Institute are then distributed to MHI companies based on a range of risk-adjustment factors (see section below). As can be seen in the graph below, the formula was revised in 2012 and took prior hospitalisation (depending on how many nights were spent consequently after each other either in a hospital or nursing home on the past year) into account. Through the amendment in the risk-adjustment formula, the gross redistribution amount increased significantly. Nevertheless, the net redistribution across MHI companies has not increased, as redistribution takes place mostly within the individual companies. Redistribution within companies is common as each insurance company has both high and low risks during the same period of time. Hence, internal risk-adjustment is required. Based on the calculation of premiums, the improved risk-adjustment formula will consequently lead to lower premiums in the insurance plans of high risk groups. The future of the risk-adjustment scheme will lead to changes in the formula and taking other factors into account (see section on 'Factors' below).

The factors used within Switzerland's risk-adjustment model have changed since its inception in 1993. Today, factors include age (since 1993), gender (since 1993), prior hospitalisations (i.e. more than three nights in a row in an acute hospital or nursing home within the year) (since 2012), and pharmaceutical expenditures exceeding 5,000 Swiss Francs (as of 2017) (99). Further risk-adjustment factors can be included by the Federal Council, the senior executive body of the federal government (99).

The figure below outlines trends in the gross redistribution of funds within Switzerland's risk adjustment mechanism, including the source of the redistribution. It is evident from the data that the majority of redistributed funds stem from differences in gender.

²⁸ There are 26 cantons in Switzerland, each with their own constitution, legislature, government and courts.

Figure 60: Swiss risk-adjustment trends and redistributions (2007-2012)



Source: (99)

4.2.6 Risk-adjustment mechanisms in Austria

In 1961, Austria introduced a Risk Equalisation Fund (REF), which has a primary purpose of compensating for structural differences among regional health insurance carriers (that is, differences in contribution income, insured persons, and region). Participation of social insurance carriers in the REF has changed over time with insurance carriers joining and leaving between its inception until now, where only GKKs participate (see Table 16).

Table 16: Participation of insurance carriers in the Risk Equalisation Fund

Period	Insurance carriers participating in REF
Before 2000	GKK, VA Bergbau and SVA
2001-2002	GKK, VA Bergbau, SVA and SVB
2003-2004	GKK, VA Bergbau, SVA, SVB, VAEB and BVA
2005 to current	GKK

Sources of funding

The majority of funds for the REF stem from contributions collected by GKKs. Remaining funds are sourced through various streams. An overview of each funding stream and their contribution to the REF (as of 2016) is provided in Table 17.

Table 17: Assets and Source of Funding for the Equalization Fund 2015, based on Handbuch der ÖSV, 2016

Assets of the REF, including the Source of Funding, in 2015 (in € mio)	
(1) Contributions of the GKK	€167.9
(2) Flat rate payment §1a GSBG	€91.9
(3) Contributions according to §3 DAG (employer tax)	€27.9
(4) Income according to §447f Abs. 9 ASVG	€0
(5) Other incomes	
(a) Transfers according to §447a Abs. 10 ASVG (tobacco tax)	€12.4
(b) Interest earnings	€0
Total	€300.1

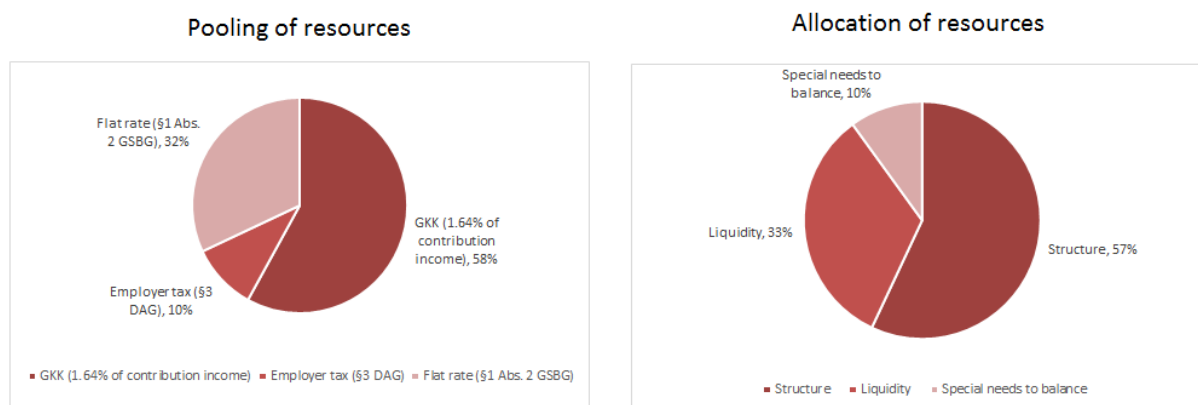
Mechanism

The allocation of REF funds is based on three criteria:

1. The equalisation of structural differences
2. The balancing of the liquidity
3. The covering in case of a special need for compensation.

Each of the above three criteria are assigned a weighting to reflect their relative importance. As of 2015, structural differences were weighted at 57%, and liquidity and special needs compensation at 33% and 10%, respectively. A visual description of the allocation of funds based on the above criteria is provided in Figure 61.

Figure 61: Pooling and Allocation of the Financial Resources of the Risk Equalisation Fund, Contrast EY illustration, based on data from HVSV.



Factors

In 2006, a scientific structural model was introduced to predict healthcare expenditure across GKK insurance carriers. The structural parameters chosen for inclusion are age, gender and cost-intensity of the insured persons. Data for these parameters are sourced from the Main Association of Austrian Social Security Institutions, who are responsible for calculating the structural equalisation model.

Further details on the REF can be found in Volume 2 of this report (Situational Analysis report).

Additional risk-adjustment mechanisms

The Risk Equalisation Fund plays the most significant role in redistributing funds across health insurance carriers. However, a range of other compensatory mechanisms also exist and have been outlined in Table 18 below.

Comparison with other European risk-adjustment models

Unlike other European social health insurance systems reviewed within this section, Austria does not have a competitive social insurance market. This, however, does not mean risk-equalisation is not necessary. Specifically, risk-adjustment is required given:

- **Regional differences:** income from contributions differs between the Länder due to differences in each region's labour market, as a result, income from contributions differs across regional carriers (i.e. GKKS)

- **Demographic differences:** dissimilar ratios between working persons versus pensioners, or differences in the age of insurance-entitled persons
- **Structural differences:** structural changes regarding the professions of the insured (for example the number of employed persons is growing, whereas the number of farmers is diminishing).

It is evident from a review of international systems that all countries take a different approach to risk-adjustment. Despite this, there are two areas where Austria differs significantly from all other countries. First, the Risk Equalisation Fund, which is the primary risk-adjustment scheme in the system, is made up of just 1.64% of GKK contributions, in other countries such as Germany and Switzerland (for outpatient care), all monies received by insurers are risk-adjusted, while in the Netherlands this figure is 50%. Second, Austria is unique in that not all insurers participate in risk-adjustment, with only the GKKs participating in the Risk Equalisation Fund. For further information, please see Volume 4 – Situational Analysis.

Table 18: Financial compensation in the Austrian social insurance system

Cause	Participants	Instrument	Budget 2016 (€ millions)
<i>Funds</i>			
System of structural equalisation	All regional health funds, i.e. GKKs	Equalisation fund of GKKs (§ 447a ASVG)	311
Transfer to	All social security carriers	Equalisation funds for hospital financing	a) 5.138
a) Länder health care funds	(Exception: Insurance Institution for Austrian Notaries)	(§ 447f ASVG)	b) 83,6
Transfer to Länder health care funds (Health promotion funds)	All health insurance carriers	Health promotion funds according to § 19 G-ZG (§ 447g ASVG)	13
Health promotion and physical health examination	All health insurance carriers	Funds for early detection (physical health) examinations and health promotion (§ 447h ASVG)	4
Orthodontic adjustments for children and teenagers	All health insurance carriers	Funds for dental health (§ 447i ASVG)	80
<i>Accounting</i>			

Cause	Participants	Instrument	Budget 2016 (€ millions)
Financing of pension insurance	All pensions insurance carriers (Exception: Insurance Institution for Austrian Notaries)	Accounting entity pension insurance	2.303
Financial support of goal-oriented regulation	All GKKs	Accounting entity funds for the insurance structure	10
<i>Other compensatory measures: Claims for compensation and equalisation of burden</i>			
Claims for compensation of health insurance towards accident insurance	All GKKs, BKKs and AUVA (Exception: BKK for public transport employees) Compensation by federation	Special flat rate (§ 319a ASVG)	174
Claims for compensation for support payments in case of long-lasting sickness (§ 104a GSVG)	SVA and AUVA	Reimbursement of expenses to SVA (§ 319b ASVG)	
Non-uniform burden of transfer to Länder health care funds (§ 447f ASVG)	All health insurance carriers Compensation by federation	Equalisation of burden for hospital care expenses (§ 322a ASVG)	
Maximum prescription fee 2% of net income	Health insurance carriers according to ASVG, GSVG, BSVG Compensation by federation	Equalisation of burden REGO (§ 322b ASVG)	

Source: Finanzierung – Wahlmodul – Allgemeine Fachausbildung, 2016

4.2.7 Policy options: Risk-adjustment

Risk-adjustment mechanisms

At a high-level, risk-adjustment involves an allocation of pooled funds to purchasers based on need. This does not mean that carriers with favourable risk-profiles wholly ‘lose out’, given they too will receive funds, rather their allocation per insuree will be relatively lower than sicker/older insurees.

Required risk-adjustment within Austria’s social insurance system depends on the structure of insurance carriers. A summary of risk-adjustment requirements under the proposed structural models has been included in Table 19.

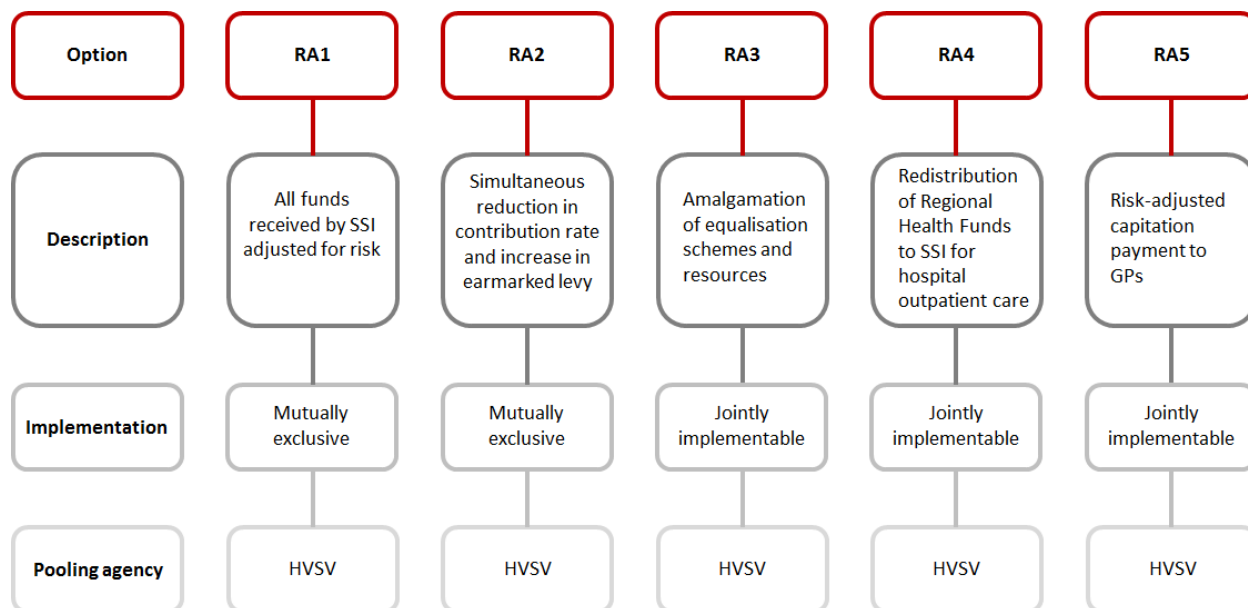
Table 19: Proposed structural models and aligning risk-adjustment requirement

Proposed structural model	Risk-adjustment requirement
<p>Model 1*</p> <p><i>National insurance carriers for accident, pension and health (split into employed and self-employed)</i></p>	<p>Natural risk-adjustment caused by significantly large risk pools.</p>
<p>Model 2*</p> <p><i>As model 1, except removal of civil servants from employed health and accident insurance</i></p>	<p>Natural risk-adjustment for pension, accident and self-employed health insurance; formal risk-adjustment required between civil servants and employed health insurance required.</p>
<p>Model 3*</p> <p><i>National pension insurance and one national health and accident insurance pillar</i></p>	<p>Natural risk-adjustment caused by significantly large risk pools.</p>
<p>Model 4</p> <p><i>Existing structure with greater risk-adjustment across carriers, in addition to enhance Joint Specialist Centres</i></p>	<p>Greater levels of risk-adjustment with the exact risk-adjustment mechanism and size to be specified.</p>

Note: *For variations of these models involving regional or healthcare zone branches, risk-adjustment across regions/zones would be required.

Given the current structure is maintained, that is, model 4 is implemented, comprehensive risk-adjustment mechanism is required. This section describes five policy options which could be adapted to the structural model developed under model 4 to improve both efficiency and equity. The options are not necessarily mutually exclusive, and in certain cases, could be implemented in unison.

Figure 62: Proposed risk-adjustment policy options



Note: RA3 is broken down into RA3(a) and RA3(b) to reflect marginal differences in the sources of revenue pooled for risk-adjustment.

Risk-adjustment option 1 (RA1)

Description

An analysis of the breakdown of revenue for social health insurance carriers in Austria reveals the minor role risk-adjustment plays in the current system. Specifically, just 1.7% of health insurance revenue stems from the Risk Equalisation Fund (§ 447a), compared to 82.7% and 10% from contributions and VAT compensation (GSBG), respectively (100). Following on from international experience, RA1 proposes an expansion and extension of risk-adjustment, specifically by:

- Pooling all revenues into a central fund (operated by the HVSV) which are then redistributed according to a range of risk-adjustment factors
- Extending risk-adjustment across all health insurance carriers, not only GKKs.

Out of all the proposed options, RA1 is the most comprehensive and is therefore associated with significant efficiency and equity gains.

Due to possible constitutional constraints, the possibility of implementing this option is uncertain, therefore other proposed options should also be considered.

For the above reason, consideration could be given to implementing RA1 in a step-wise approach. That is, first introducing partial risk-adjustment, with incremental increases in the proportion of funds risk-adjusted over time.

Legal considerations

According to the case law by the Constitutional Court, a mechanism aiming to compensate risks between different institutions and groups would not violate constitutional principles given there is a 'sufficient personal and material link' between the respective health insurance carrier populations ('Versichertengemeinschaften'). The link will be more sufficient smaller the differences identified with regards to contributions and benefits (including the framework of contractual partnership law) of the respective scheme. Without a sustainable withdrawal or even elimination of those differences (that could be achieved by simple legislation without a two-thirds majority) there is no sufficient link between the GKKs and the BVA, the GKKs and SVA, nor between SVA and SVB.

RA 1 would meet the requirements under Constitutional Law only insofar as structural disadvantages can be proved in an evidence-based way (and are not caused only by regional disparities which are already compensated within national-wide carriers themselves). Otherwise a risk adjustment scheme could be implemented only by an amendment to Federal Constitution (i.e. only with a two-third majority). Nevertheless a risk adjustment (mainly) based on taxes would be possible from a legal point of view (for details see below Volume 2, chapter 8.).

Risk-adjustment option 2 (RA2)

Description

RA2 proposes a reduction in the employee contribution rate across all health insurance carriers. The reduction in the contribution rate would be matched by an equivalent increase in an earmarked levy, which would be channeled into a central fund managed by the HVSV. The HVSV would then be responsible for distributing pooled funds to health insurance carriers based on a set of pre-defined risk-adjustment factors.

The exact reduction in contributions is not defined in this report, rather it should be discussed and debated by government stakeholders. It is suggested that changes to the contribution base are not drastic, given the level of tax is outside the control of insurance carriers. Specifically, under RA2, insurance carriers will be required to give-up control over a proportion of their revenue, with this proportion now being subject to political negotiation.

If implemented, the current Risk Equalisation Fund would be abolished, given earmarked levy funds are expected to be sufficient to equalise risk.

Legal considerations

It has previously been mentioned that a system for compensating different structural risks based on taxes would meet the requirements under constitutional law. These taxes should be collected by the HVSV on behalf of the 'Bund' (or directly by a Federal authority) and should be explicitly declared as 'tax', so revenue collected from these taxes may be used for a specific purpose to the benefit of health insurance.

Risk-adjustment option 3 (RA3)

Description

RA3 proposes amalgamating funds from existing risk-equalisation schemes to be pooled into a central fund managed by the HVSV. The figure below outlines identified sources of revenue which could be used for risk-adjustment purposes. The sources of revenue are broken down by 'current sources of risk equalisation' and 'new potential sources of risk equalisation'.

Out of all proposed options, RA3 is the most feasible in the short-term given it does not require any constitutional changes, or amendments to the contribution base.

As outlined in the table below, RA3 can be broken down into two sub-options: RA3(a) includes all current and new sources of risk equalisation, including the Hebesätze, while in RA3(b), the Hebesätze would be excluded.

Table 20: Sources of revenue for risk-adjustment option 3

Source of revenue	Amount
<i>Current sources of risk equalization</i>	
Equalisation fund for regional health insurance (§ 447a)	Total budget of €311 million in 2016
Equalisation fund for the burden of REGO (§ 322b ASVG)	Total amount (as of 2015) was €6 million
Fund for dental health (§ 447i ASVG)	Flat rate payment of €80 million
Health promotion fund (§447g)	Total budget of €13 million in 2016
Fund for preventative check-ups and health promotion (§447h)	Total budget of €3.5 million in 2016
Fund for offsetting burden due to 15a agreement (§322a ASVG)	Total amount (as of 2015) was €132 million
Special lump sum payment accident insurance - social health insurance (§319a ASVG)	Equated to €173.96 million in 2016
Special lump sum payment social health insurance – accident insurance (§149ASVG)	Equated to €49.64 million in 2015
<i>New potential sources of risk equalisation</i>	
VAT from Ministry of Finance (currently refunded straight to insurance carriers)	In 2015, equated to €454 million (continue to increase with higher levels of expenditure)
Pharmaceutical claw-back (currently refunded straight to individual health insurance carriers)	in 2016 amounted to €122 million in (increase to €160 million in 2017, with additional increases expected in future years)

Source of revenue	Amount
Between 2012 and 2016, the government contribution rate (i.e. employer) for civil servants was reduced by 0.3%. This policy could be adopted once again with additional funds used for risk-adjustment	Given the reduction in the employer's contribution (i.e. the Government) is decreased by 0.3 percentage points, savings of €60 million annually could be redirected for risk-adjustment purposes.

Option RA3(a) only: Hebesätze* – pension insurance is obliged to pay the Hebesätze to health insurance (5.1% rate multiplied by the Hebesätze, which differs cross funds).

In 2015, the PVA (GKK), VAEB, SVA and SVB paid **€1.6 billion** as Hebesätze contributions*.

Given pension insurance is funded to a considerable extent by government, the Hebesätze are indirectly funded through tax money and can therefore be used for risk-adjustment purposes.

TOTAL FUNDS FOR RISK-ADJUSTMENT

RA3(a): €3 billion annually

RA3(b): €1.4 billion annually

Note: *There is no Hebesätze for retired civil servants as their pensions are paid directly by former employers and are financed directly out of the federal budget.

Legal considerations

There are no legal impediments to implementing RA3.

Risk-adjustment option 4 (RA4)

Description

In Austria, hospitals are largely financed through the nine State Health Funds, who are in turn funded by social insurance (46%), provinces (32%), federal states (12%) and municipalities (11%):

- The Federal Government through the Federal Health Agency (i.e. general taxes)
- Regional VAT allocation from the Länder (i.e. 0.95%)
- Share of VAT from municipalities according to the fiscal equalisation law (FAG)
- Respective Land
- GSBG-funds (Health and Social Sector Contribution Act)
- Social insurance via the Federal Health Agency (§447f ASVG) (101).²⁹

Despite contributing to just under half of total hospital budgets, social insurance carriers are not entitled to participate in decision-making processes regarding healthcare within a hospital setting.

Under RA4, social insurance carriers would subsume joint responsibility for funding and operating outpatient centres in hospital settings, which currently fall under the responsibility State Health Funds. At present, the proportion of total State Health Funds dedicated to outpatient centers is approximately €661.5 million per year.³⁰ However, these figures are based on historical negotiations and therefore do not represent the actual costs associated with providing outpatient care. For example, in 2015, actual expenditure on outpatient departments within hospitals equated to €2.015 billion.³¹

Under RA4, social insurance, provinces, states and municipalities would continue to divert resources into State Health Funds. Once collected at the regional level, State Health Funds would be required to allocate approximately 15% of total funds to the HVSV (approximate amount of funds spent on outpatient hospital departments). Funds pooled within a joint fund will be redistributed to health insurance carriers based on several risk-adjustment factors.

Carriers will spend funds on improving primary care and outpatient departments within hospitals, thus reducing the number of hospitalisations. For example, by developing multi-professional networks within an outpatient setting. Funding will be spent collectively, therefore RA4 requires resources to be pooled under a joint fund and allocated based on need (e.g. indirect risk-adjustment). Although demand for

²⁹ The Federal Government is included in the list, but not in the percentages above, given it is captured in figures from the Länder and municipalities (i.e. Federal Government is responsible for collecting taxes on behalf of the Länder and municipalities).

³⁰ No data was provided for Burgenland. Therefore, based on population size, the figure was derived by multiplying the Vorarlberg figure of €44.7 million by 0.8, which equated €35.8 million.

³¹ Please note that this figure may be an underestimate of the real costs given data for Burgenland was not available, further Styria does not explicitly state this figure, therefore only costs that were clearly defined as be redistributed to outpatient departments was included.

inpatient care may decline, in the short-run (i.e. transition period), funding for hospitals should cover fixed costs, such as building maintenance and employee wages.

In addition to improving efficiency and equity, RA4 has the added benefit of aligning outpatient services, which are currently offered in both hospitals and outpatient specialist clinics.

Legal considerations

Even though no constitutional obstacles can be identified regarding this option, it has to be considered that a number of amendments would be required. Amendments to ASVG and other social insurance laws may be adopted by the Federal Parliament (with a simple majority) but require amendments to several treaties between the Federal State and the Länder, according to Article 15a of the Federal Constitution including the 'Finanzausgleich' (Fiscal Equalisation Law).

Risk-adjustment option 5 (RA5)

Description

GPs in Austria are reimbursed through a mix of fee-for-service (30%) and contact capitation (70%), where GPs receive the one flat rate payment for each individual patient within a quarter (i.e. three months). Under RA5, a proportion of health insurance contributions would be pooled into a central fund, managed by the HVSV, with funds being used to pay GPs on a risk-adjusted capitated basis (i.e. all GP income would be risk-adjusted and provided in the form of a capitated payment). For this system to work, patients must be registered with a single GP for one year (as opposed to three months, which is the current arrangement), with the possibility of switching GPs every six months if unsatisfied. To encourage patients to register with the one GP, financial incentives could be introduced. For example, as is the case in France, reducing user charges for patients who visit the 'preferred GP' (i.e. the GP they are registered with) (see section 5.3 for further details on the French system).

The requirement for patients to be registered with one GP for a year represents a significant cultural shift, given the high-value placed on freedom of choice within the Austrian healthcare system. For this reason, RA5 is a longer-term solution and should only be introduced once there is increased acceptance among the population that changes to the healthcare system are required.

Legal considerations

RA5 would require several legal amendments. First, of all regulations, such as § 135 (2) ASVG stipulating that insured persons must have a choice at least between two physicians available within a reasonable period of time, would have to be changed. Second, it is likely that the general contracts concluded with

the Chamber of Physicians would have to be changed, which is subject to the consent of the doctors' representatives. Legislative interventions in this respect might be possible, however, they must be justified under constitutional law by 'public interest', in that the intervention must be appropriate and reasonable. Any change of the tariff system must consider the constitutional principle of 'Vertrauensschutz', meaning that all individuals may trust in a legal situation (especially if it concerns a long-period of time) providing for a certain sort or level of benefits and, thus, is protected against intensive and/or sudden reductions (i.e. a smooth transition is required if physician fees are changed to their disadvantage).

Risk-adjustment factors

Despite significant advancements in risk-adjustment mechanisms, their predictive ability is limited. For example, in Germany a 2013 study found that only 20% of differences in expenditure could be accounted for by changes in risk-adjustment factors (87). In the Netherlands, van de Ven *et al.* (2015) measured the systematic under and over payment of insured people at -€670 and +€152, per person per year, respectively (93).

Given the inherent difficulty of accounting for differences in healthcare expenditure, a Scientific Advisory Committee should be commissioned to identify risk-adjustment factors relevant to the Austrian context. Once a set of risk-adjustment factors has been chosen by the Scientific Advisory Committee, their decision could be enforced by the law that governs social insurance. This could be the ASVG itself as well as a specific provision in a separate legislative act.

It is suggested that members of the Scientific Advisory Committee draw upon existing forms of risk-adjustment in countries such as the Netherlands, Germany and the UK (see Table 21 for example risk-adjustment factors). However, applicability within the Austrian context needs to be considered, for example, the possibility of 'gaming' among health insurance carriers, with only those factors that cannot be manipulated being included within the system. Lastly, in addition to needs-based, demand side risk-adjustment factors (see Table 21), in the short-term, it is recommended that supply-side factors (e.g. employees) are considered, given it takes time to make significant structural changes and reallocate resources. Over time, for example 10 years, the weight or relative importance of supply-side factors should be reduced to make way for demand-side, needs-based factors.

Table 21: Commonly applied risk-adjustment factors

Risk-adjustment factor	Example countries
Age and gender	Nearly all models
Diagnosis	Germany, Netherlands
Disease severity	Germany, Netherlands
Disability status	Belgium, Netherlands
Employment status	Belgium
Prescription of drugs (indicator of chronic diseases)	Netherlands (inpatient and outpatient prescriptions) Switzerland (pharmaceutical expenditure)
Employment status	Germany, Belgium, Netherlands (income)
Sickness allowance entitlement	Germany
Unmet need and health inequalities	UK
Geography and urbanisation	UK, Belgium, the Netherlands

Source: (75,80)

Summary of risk-adjustment policy options

- **RA1** and **RA2** offer the most comprehensive forms of risk-adjustment, and are therefore mutually exclusive
- **RA3-5** are less comprehensive and may be jointly implemented with RA1 and RA2
- **RA3** would build upon existing risk-equalisation schemes, and of all the four options, is probably the most straight-forward to implement. For this reason, RA3 could be used as a first step to

enhance risk-adjustment before more comprehensive mechanisms are considered (i.e. RA1 and RA2)

- **RA4 and RA5** require reforms within the primary and hospital systems and therefore cannot be implemented unless there is a willingness among policy makers to change existing arrangements
- A Scientific Advisory Committee could be commissioned to determine appropriate risk-adjustment factors to be applied to the risk-adjustment scheme
- The Scientific Advisory Committee is advised to review relevant factors from existing, sophisticated risk-adjustment schemes; unlike many of these schemes, supply-side factors should be taken into account in the short-term
- Changes to risk-adjustment mechanisms could be extended to all layers of the Austrian healthcare system.

RA1, where all revenue received by insurance carriers are risk-adjusted, and **RA2**, which involves a simultaneous reduction in contributions and the introduction of an earmarked levy, are the most comprehensive of the proposed options. Therefore, these mutually exclusive options are expected to have the greatest impact on health system performance.

The remaining options, **RA3** (pooling of existing risk-equalisation schemes), **RA4** (redistribution of hospital outpatient funds to social insurance) and **RA5** (GP risk-adjusted capitation payment), are not as extensive as RA1 and RA2, however, from a legal and political perspective, may be easier to implement in the short-term. Further, these options are not mutually exclusive and could, in certain cases, be jointly implemented. For example, a move towards a risk-adjusted capitated payment scheme for GPs (**RA5**) would complement a system where funds from various risk-equalisation schemes are merged and redistributed to health insurance carriers (**RA3**).

Lastly, **RA4** and **RA5** involve major structural changes within the system. As a result, either scheme should only be pursued if there is strong political motivation.

Going forward a Scientific Advisory Committee could be established to develop a range of risk-adjustment factors relevant to the Austrian context. It is suggested that the Scientific Advisory Committee draw upon existing countries with sophisticated risk-adjustment systems (e.g. UK and the Netherlands). Further, in the short-term (e.g. 10 years), risk-adjustment could take into account both demand- and supply-side factors.

Although outside the remit of this review, consideration should be given to extending risk-adjustment to all layers of the Austrian healthcare system. Namely, between the Federal Government and the Länder (State Health Funds) (where funds are currently allocated according to historical allocations), and between social insurance and the Länder.

Implementation of any of the proposed risk-adjustment options should be done in a gradual manner. This will allow time for supply-side factors to re-adjust, which is not always possible in the short-run.

It is important to highlight that even a more extensive risk-adjustment scheme won't necessarily create a level playing field, given, risk-adjustment factors explain only part of total healthcare expenditure. That is, the redistribution of funds will not wholly reflect actual needs of each carrier's insured population. As a result, carriers with favourable risk profiles are likely to continue to accumulate sufficient reserves.

Lastly, risk-adjustment should not be expected to solve all inefficiencies and inequities within the healthcare system, given that some could be considered 'acceptable'. For example, tertiary hospitals and highly specialised centres (e.g. for rare disease) should continue to be located in highly populated urban areas only. Acceptable inefficiencies include subsidies to primary healthcare units, physician networks, as well as healthcare workers in remote and rural areas in order to improve access in these locations.

5 Financing of social security

Chapter 5 explores healthcare financing systems in Austria and other social health insurance systems across Europe. The chapter has been broken into five sections covering collection of contributions, benefit packages, user charges, investment opportunities in healthcare, and concludes with an overview of potential policies to broaden the social welfare base.

5.1 Collection of contributions

Contribution systems in Austria are governed by different laws and therefore may result in varying contribution bases and rates across insurance funds. Ultimately this leads to different levels of self-funding, as well as different ratios between individual's contributions and funds provided by federal tax. Therefore, an alignment in the collection of contributions across different types of funds may render the contribution systems more equitable. This chapter provides an overview of four different contribution systems, followed by an assessment of the differences and recent policy developments, and a number of policy options to harmonise the collection of insurance contributions.

5.1.1 Workers and employees

For workers and employees the contribution is based on the due earned income during the contribution period, as specified in §44 ASVG. Following §49 ASVG, the remuneration is defined as monetary and in-kind earnings, which the compulsory insured employee is entitled to, owing to his/her employment. As such, the principle of entitlement-to-remuneration applies, rather than the inflow principle that is predominantly found in tax law. In the case of entitlement-to-remuneration, the minimum level considered for the contribution base is the civil claim for payment, as regulated by, for example, general contracts and employment contracts. However, contributions are not based on the actual amount of payment received. Having a claim to a specific amount is sufficient to calculate and pay contributions, regardless of whether the employee has received a lower pay.

The maximum contribution for workers and employees for the year 2017 is set at €4,980 per month, which amounts to €166 per day, and the marginal amount for those with minor employment is set at €425.70. In line with the ASVG, the contribution rates apply to workers, employees, freelancers, agricultural workers and miners. The rates amount to 1.3% for the accident insurance, which is paid by the employer; 7.65% for the health insurance, of which 3.87% and 3.78% are paid by the employee and employer respectively; and 22.8% for pension insurance, which is split into 10.25 % for the employee and 12.55%

for the employer. Please see Table 22 for a detailed list of the contribution rates for workers and employees.

Table 22 Social insurance contribution rates (in percent) for workers and employees in 2017

3. Beitragssätze (in Prozent)

Bezeichnung	Arbeiter ¹⁾			Landarbeiter			Angestellte			Freie Dienstnehmer		
	ins-gesamt	Dienstnehmer-anteil	Dienstgeber-anteil	ins-gesamt	Dienstnehmer-anteil	Dienstgeber-anteil	ins-gesamt	Dienstnehmer-anteil	Dienstgeber-anteil	ins-gesamt	Dienstnehmer-anteil	Dienstgeber-anteil
Krankenversicherung, § 51 ASVG	7,65	3,87	3,78	7,65	3,87	3,78	7,65	3,87	3,78	7,65	3,87	3,78
Unfallversicherung, § 51 ASVG	1,30	0,00	1,30	1,30	0,00	1,30	1,30	0,00	1,30	1,30	0,00	1,30
Pensionsversicherung, § 51 ASVG ¹⁰⁾	22,80	10,25	12,55	22,80	10,25	12,55	22,80	10,25	12,55	22,80	10,25	12,55
Knappschaftliche Pensionsversicherung, §§ 51,51a ASVG	28,30	10,25	18,05	-	-	-	28,30	10,25	18,05	-	-	-
Arbeitslosenversicherung (AV) ⁹⁾	6,00	3,00	3,00	6,00	3,00	3,00	6,00	3,00	3,00	6,00	3,00	3,00
IESG-Zuschlag	0,35	0,00	0,35	0,35	0,00	0,35	0,35	0,00	0,35	0,35	0,00	0,35
Arbeiterkammerumlage ²⁾	0,50	0,50	0,00	0,75	0,75	0,00	0,50	0,50	0,00	0,50	0,50	0,00
Wohnbauförderungsbeitrag	1,00	0,50	0,50	-	-	-	1,00	0,50	0,50	-	-	-
Schlechtwetterentschädigungsbeitrag ³⁾	1,40	0,70	0,70	-	-	-	-	-	-	-	-	-
Nachtschwerarbeits-Beitrag ⁴⁾	3,40	0,00	3,40	3,40	0,00	3,40	3,40	0,00	3,40	-	-	-
Dienstgeberabgabe ⁵⁾	16,40	0,00	16,40	16,40	0,00	16,40	16,40	0,00	16,40	16,40	0,00	16,40
Beitrag für Versicherte in geringfügigen Beschäftigungsverhältnissen gemäß § 53a ASVG ⁶⁾	14,12	14,12	0,00	14,12	14,12	0,00	14,12	14,12	0,00	14,12	14,12	0,00
Beitrag zur Betrieblichen Vorsorge (BV) ⁷⁾	1,53	0,00	1,53	1,53	0,00	1,53	1,53	0,00	1,53	1,53	0,00	1,53
Sozial- und Weiterbildungsfondsbeitrag (SO) ⁸⁾	0,80	0,00	0,80	-	-	-	0,80	0,00	0,80	-	-	-

5.1.2 Self-employed persons engaged in commercial activity and insured with the SVA

The contribution paid for by self-employed persons insured with the SVA is based on the individual's income, as stated on the income tax statement. In addition, compulsory pension and health insurance contributions, which were paid in advance for the respective calendar year, are added to the income³². The contribution base for health insurance is restricted to a maximum of €69.720 and a minimum of €5.108,40, while the minimum base for the pension insurance amounts to €8.682. As the income tax statement is issued at the end of each year, a preliminary calculation of contributions is conducted.

In 2016, the monthly minimum contribution base for health insurance was lowered to the level of the ASVG-based marginal earnings threshold. In addition, the monthly minimum contribution base for the pension insurance will be gradually lowered in a total of 12 times to the marginal earnings threshold until 2022. The contribution rate for SVA-insured amounts to 18.5% and 7.65% for pension and health insurance respectively. If individuals are compulsory insured under the FSVG law, then the contribution

³² (102)

rate for pension insurance is 20%. In the case of the accident insurance, insured pay a monthly fixed amount of €9.33 (in 2017), which is independent of income.

5.1.3 Farmers insured with the SVB

There are two contribution systems in the SVB and insured persons can either pay contributions based on the value of their agricultural/forestry business or opt for the contributions foundation option, which is based on the income as indicated on the income statement. If the insurance value (*Vollpauschale*) of a business is below €75,000 (or below €130,000 in the case of *Teilpauschale*), then the insured needs to opt for the first option. As a result, approximately 90% of all businesses fall into the first category. In this case, the contribution rates for health, pension and accident insurance are 7.65%, 17% and 1.9% respectively. In 2017, the minimum contribution base in the flat-rate system amounts to €785.56 for the health and accident insurance, and €425.70 for pensions insurance.

The insurance value, which serves as a basis for the contribution rates, is calculated using the tax unit value of the agricultural/forestry area and a so-called income factor, which is a fixed percentage stratified by unit value levels. However, it must be noted that the percentage decreases as unit values increase, constituting an advantage to larger businesses. For instance, the percentage of an agricultural area with a tax unit value between €5,100 and €8,700 is set at 19.17%, while that for tax unit values between €43,700 to €87,500 amounts to 3.06%. Furthermore, each unit value category is rounded up to the next €100, which may lead to an average reduction of €50 of the unit value. It must be noted that for farming businesses operated by married partners, the maximum contribution basis is reached with a unit value of €277,200, which is more than three-times higher than that for a business operated by a single operator (i.e. €87,500). Table 23 provides an overview of the unit values and fixed percentages used to determine the insurance value, which serves as a basis for the contribution rates.

Table 23: Overview of unit values for the calculation of the insurance value of an agricultural/forestry business

Unit value (Einheitswert)				Percentage considered for contribution base (fließt in BGL ein)
from	- EUR	to	5,000 EUR	19.17 %
from	5,100 EUR	to	8,700 EUR	21.30 %
from	8,800 EUR	to	10,900 EUR	17.31 %
from	11,000 EUR	to	14,500 EUR	11.98 %
from	14,600 EUR	to	21,800 EUR	9.72 %
from	21,900 EUR	to	29,000 EUR	7.19 %
from	29,100 EUR	to	36,300 EUR	5.33 %
from	36,400 EUR	to	43,600 EUR	3.99 %
from	43,700 EUR	to	87,500 EUR	3.06 %

For insured persons who opt for the contribution foundation option, the contribution is calculated on the basis of income that is indicated on the income tax statement. The method of assessment is the same as the one used under the GSVG law. In contrast to the first option, the minimum contribution bases are higher, amounting to €1,476.16 for health and accident insurance, and €785.56 for the pension insurance.

5.1.4 Civil servants and public employees

In the case of the social security of the civil service, there is a maximum contribution base for health insurance that amounts to €4,980 (in 2017), however, this does not apply to the accident insurance. When it comes to pension insurance, only new contractual civil servants are insured with the PVA, in line with the ASVG law. The new contractual civil servants are charged a 10.25% contributions rate for pension insurance and the employer pays a share of 12.55%, amounting to a total of 22.8%. A maximum contribution base is in place for contractual civil servants and university employees, however, for employees who are subject to the Pension Act there is no maximum base and the pension contribution is levied by the employer. The contribution rate for the health insurance for active civil servants is 7.635%, which is split in 4.1% for the civil servant and 3.535% for the employer. For accident insurance, the rate

amounts to 0.47%, however, as previously described, there is no maximum contribution base. The table below outlines key differences in contributions between the BVA and regional funds.

Table 24: Differences in contributions for health and accident insurance between the BVA and regional funds

	BVA	Regional insurance funds
Employee contribution for health insurance	4.1%	3.87%
Employer contribution for health insurance	3.535%	3.78%
Overall contribution rate for health insurance	7.635%	7.65%
Accident insurance	0.47%	1.3%
Overall contribution rate for health and accident insurance	8.105%	8.95%

5.1.5 Differences in the collection of contributions and recent policy developments

Although health insurance contribution rates are uniform across carriers, with a minor deviation of 0.015% in the case of the BVA, contribution bases and mechanisms vary across types of funds and therefore result in different levels of self-funding, as well as different ratios between individual's contributions and funds provided by federal tax. However, variations may be partly explained by the setting of contribution bases and differences in the cumulative contributions paid for health, accident and pension insurance.

With the aim to better align the GSVG-, BSVG- and ASVG-defined contribution mechanisms, several changes were made in recent years to unify the maximum contribution bases. Nevertheless, substantial differences in the setting of contribution bases with respect to the different social insurance laws prevail. For instance, self-employed persons are assessed on the basis of their profits, farmers are assessed against the insurance value of the agricultural/forestry business, while employed individuals are assessed in terms of their salaries. Since each system follows its own logic, the reporting and examination can be different in the carriers. In particular with respect to the self-insured persons, this leads to an increased expenditure

for the controlling and verification process pertaining to the correct calculation and payment of contributions to the social insurance.

Furthermore, under the BSVG law, farmers have the option to pay contributions based on the standard value of their agricultural/forestry business or to opt for the contributions foundation option, which is based on the income as indicated on the income statement and follows the same method as applied under GSVG law. According to the SVB annual report (2015), out of a total of 120.253 BSVG-based contribution assessments, 106.249 (i.e. 88%) were calculated in terms of the standard value; 8.972 were based on an individual contribution basis, which in particular applies to multiple insured persons in the case that differential contribution bases are set to avoid the exceedance of the specified maximum contribution; 3.400 were assessed through income statements (i.e. BGT-option); and 1.732 income-producing businesses and businesses with the 'Kleine Option', where the setting of the contribution base is not or not purely based on the standard value, were assessed in terms of their earnings as indicated on the income statement.

Differences can also be found across ASVG-, GSVG- and BSVG-defined minimum contribution bases. For example, in the case of farming businesses that are operated by married partners, the minimum contribution basis for the farmers' pension insurance is €212.85 and €392.78 for the health insurance (in 2017). In contrast, the ASVG marginal earnings threshold is set at €425.70. Moreover, the calculation and setting of the contribution bases differ significantly between the employed and self-employed. For instance, self-employed persons can control their contributions basis to a certain degree through the tax law, or in the case of farmers, via the effect of the flat rate model. In addition, there are deductions for capital and restructuring gains, as laid out in the GSVG law. By contrast, the contribution base for social contributions paid by employees and workers constitutes the paid wage (Entgelt) by the employer. However, in regards to income tax, employees and workers are allowed some deductions in the so-called Arbeitnehmerveranlagung, which is similar to the income tax return of the self-employed.

5.1.6 Policy options: Collection of contributions

Multiple contribution systems in the SVB

Contributions based on actual income

Contributions for farmers and operating managers, who opt for the contributions foundation option, are assessed on the basis of the income, as stated on the tax statement. Under this option, insured persons

would pay contributions that are based on the actual net income, i.e. taxable income. The objective of a shift in taxation base is to promote an alignment between BSVG and ASVG funds in regards to the collection mechanism of contributions, and therefore to improve equity in the financing system.

Introduction of a proportional fiscal system with maximum contributions

The largest share of contribution assessments is based on the insurance value of an agricultural/forestry business. This insurance value is calculated using the tax unit value of the agricultural/forestry area and a so-called income factor, which is a fixed percentage stratified by unit value levels. However, the percentage decreases as unit values increase, constituting an advantage to larger businesses, despite the presence of maximum contribution bases. For instance, the percentage of an agricultural area with a tax unit value between €5,100 and €8,700 is set at 19.17%, while that for tax unit values between €43,700 to €87,500 amounts to 3.06%. This option proposes a shift from the regressive to a more proportional fiscal system in conjunction with the introduction of a maximum contribution amount. The rationale is to introduce a fiscal system that promotes a more equitable collection of contributions and which can be rendered fiscally neutral.

Collection of contributions in the BVA

Aligning the BVA contribution base with that of regional funds

The difference in the health insurance contribution rate between the BVA and the regional funds amounts to 0.015%, with regional funds having a slightly higher contribution rate. However, it must be noted that the share of contributions borne by employers and employees differs. As such, BVA-insured employees pay a relatively higher share of the contributions, amounting to 4.1%, as compared to 3.87% for employees insured with a regional fund. The reverse applies to the employer's share, which is set at 3.535% for the BVA and 3.78% for the regional funds. Under this option, BVA contribution rates would be aligned with those of regional funds, meaning that employee contributions would be lowered by 0.23% to 3.87%, and employer contributions would be raised by 0.25% to 3.78%, creating a new contribution ratio between employees and employers. With a total collection of €903,013,331 in contributions in 2015, an increase in the BVA contribution rate would amount to an additional €18.43 Mio in the collection of contributions.

Following the alignment between contribution rates in the first stage of the harmonisation process, BVA contributions could be rendered fiscally neutral in the mid-term. The second part of the alignment process takes into account user charges, which are currently higher for BVA-insured than for those insured with a

regional fund. In order to foster equity in the collection of contributions across funds, user charges for BVA insured would be gradually lowered to the regional fund level. This implies an estimated decrease of €71,195,921 in income for the BVA, which would be partially offset with the additional contributions of €18.4 Mio, resulting in €52.7 Mio costs to the employer. However, it must be noted that the accident insurance contribution rate, borne by the employer, remains 0.83% lower for BVA insured, than for workers and employees. In addition, the BVA is running excess reserves, which may be used to further mitigate the additional costs.

Legal considerations

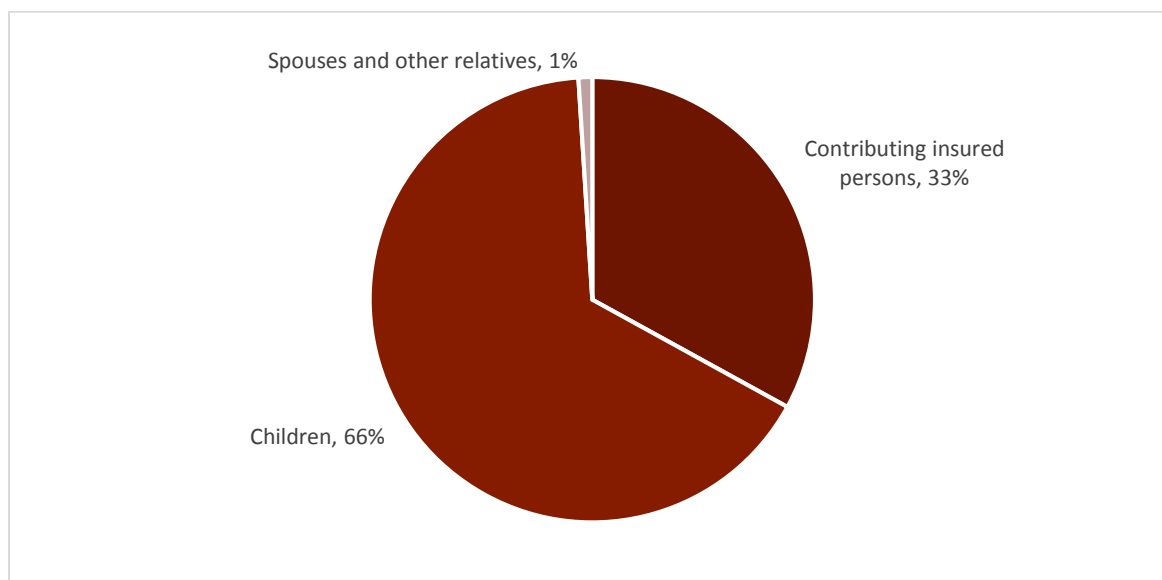
No particular constitutional (but, of course, political) impediments have to be faced in regard to the above policy options.

5.1.7 Collection of contributions of multiple insured in Austria

Number of cases and types of multiple insurances

In 2016, an annual average of 717.538 persons were covered by multiple insurances, of which two-thirds were dependents. In detail, the multiple insured comprised 66% children and 1% spouses or other relatives (i.e. partner, or civil partners). As such, only about one-third of multiple insured persons paid contributions to the social security system, i.e. were gainfully employed or pensioners. Therefore, the amount of persons who are covered by multiple insurances and also pay contributions is comparatively small.

Figure 63: Persons with multiple health insurances, annual average in 2016, based on data from HVSV



Multiple insured persons with gainful employment

In 2016, 138.587 persons³³ pursued multiple occupations (meaning two or more occupations). The number of multiple-insured working people rose slightly within the past years. However, considering that the total amount of working people has also risen, the share of persons with multiple occupations remained constant. On the 1st of July 2016, 3.5% of the Austrian workforce had more than one occupation.

Table 25: Austrian workforce with multiple occupations 2008-2016, as of 1st July 2016

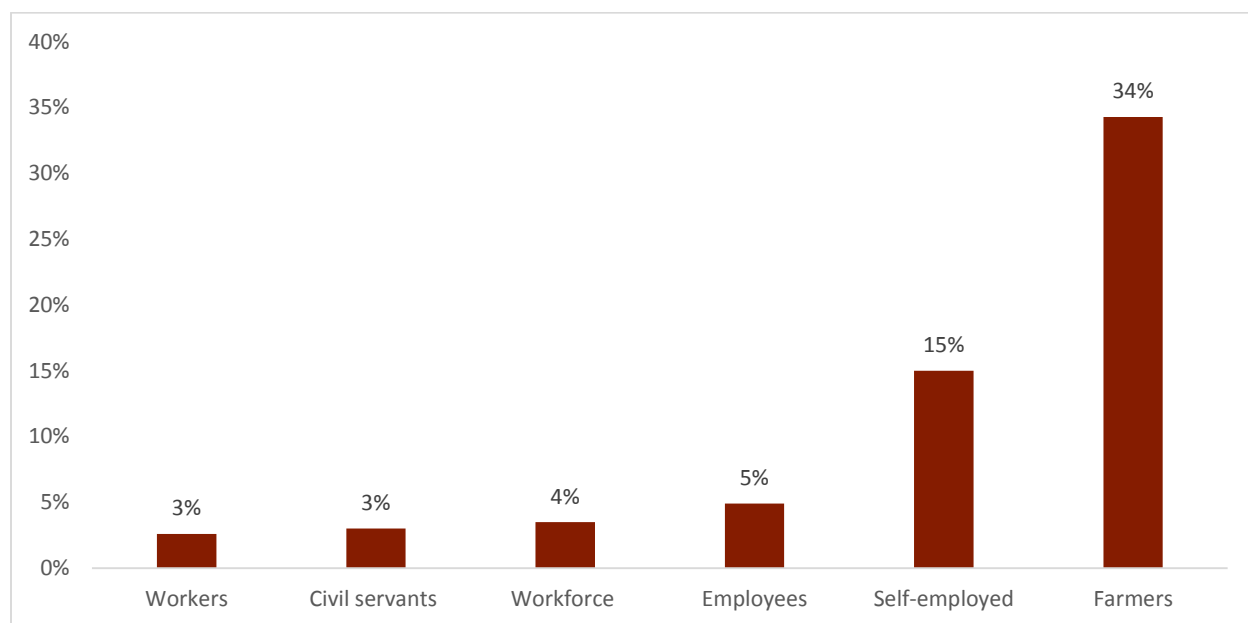
Year	Total	Number of people with one, two or multiple occupation(s)			Total number of Occupations
		One	Two	Multiple	
2016	3.951.054	3.812.467	132.987	5.600	4.095.791
2015	3.898.605	3.762.696	130.358	5.551	4.040.615
2014	3.876.062	3.741.652	128.910	5.500	4.016.490
2013	3.850.535	3.716.365	128.776	5.394	3.990.625

³³ Remark: This includes persons, who have multiple occupations, yet the same health insurance.

Year	Total	Number of people with one, two or multiple occupation(s)			Total number of Occupations
		One	Two	Multiple	
2012	3.770.318	3.637.643	127.446	5.229	3.908.699
2011	3.733.277	3.601.550	126.589	5.138	3.870.614
2010	3.667.358	3.537.436	124.893	5.029	3.802.780
2009	3.628.881	3.498.613	125.333	4.935	3.764.543
2008	3.700.450	3.567.066	128.360	5.024	3.839.320
2016	100.0%	96.49%	3.37%	0.14%	103.7%
2015	100.0%	96.51%	3.34%	0.14%	103.6%
2014	100.0%	96.53%	3.33%	0.14%	103.6%
2013	100.0%	96.52%	3.34%	0.14%	103.6%
2012	100.0%	96.48%	3.38%	0.14%	103.7%
2011	100.0%	96.47%	3.39%	0.14%	103.7%
2010	100.0%	96.46%	3.41%	0.14%	103.7%
2009	100.0%	96.41%	3.45%	0.14%	103.7%
2008	100.0%	96.40%	3.47%	0.14%	103.8%

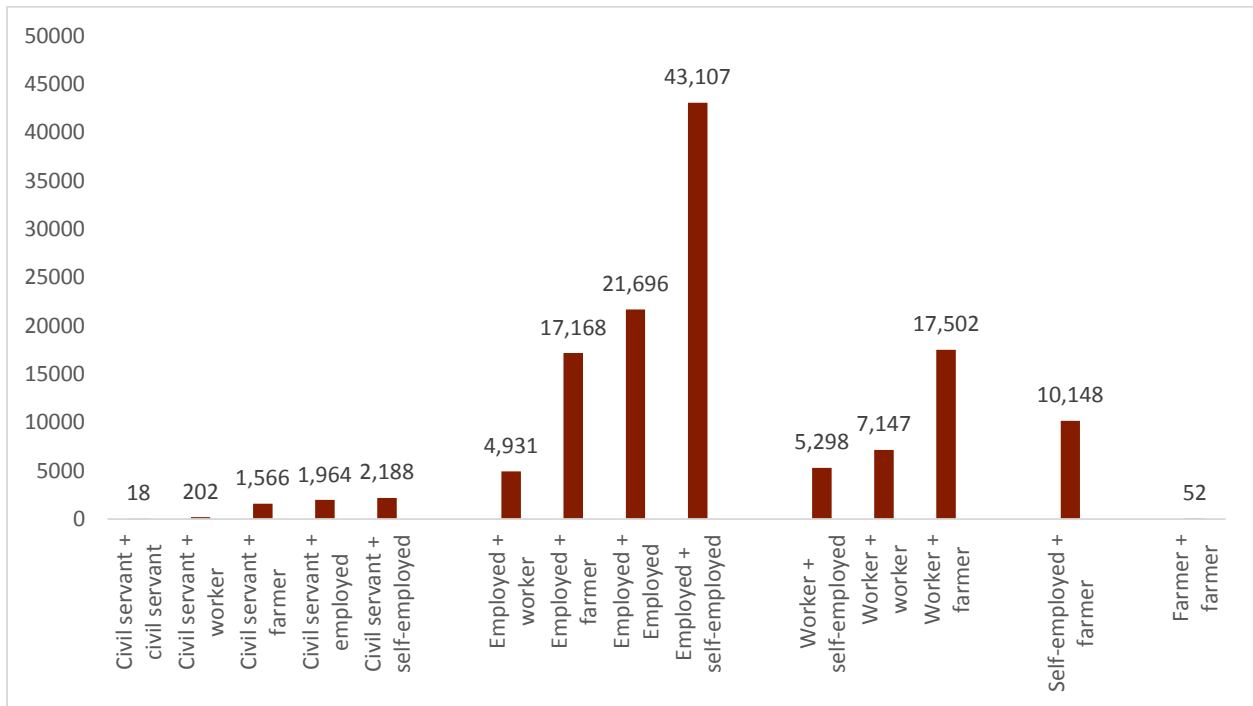
In particular, self-employed persons and farmers frequently have multiple occupations. For instance, this is the case for 15% of self-employed individuals and 34% of all farmers (please see the figure below).

Figure 64: Share of persons with multiple occupations in %, as of 2016, based on data from HVSV (men and women)



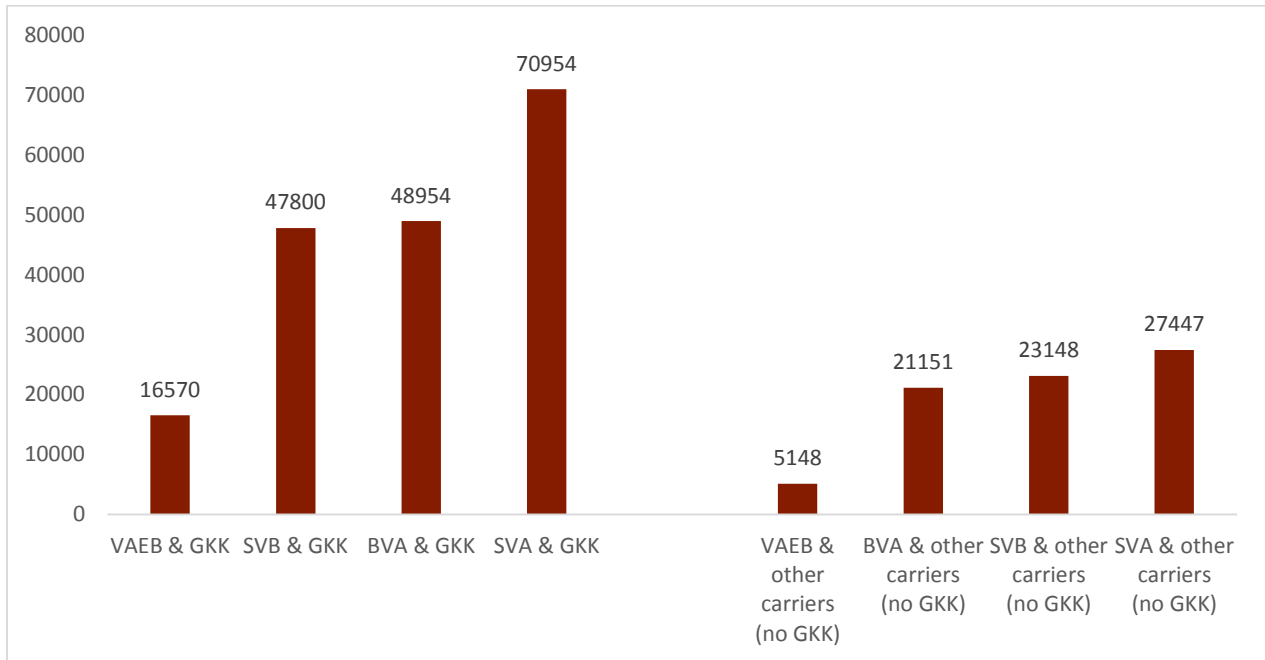
Out of 138.587 persons who had multiple occupations (meaning two or more occupations), 47% were self-employed and 35% were farmers (as of 1st July 2016). For persons with two occupations, the most common combination was being self-employed and employed, which was followed by being in twofold employment, and the combination between farmer and employee/worker (please see figure below).

Figure 65: Working persons who have two occupations, as per 1st July 2016, based on data from HVSV



With regards to the types of social security carriers, contribution-paying multiple insured persons were most commonly insured with one of the Regional Health Insurance Institutions and the Social Insurance Institution for Commerce and Industry (SVA) (for further information on combinations of insurance carriers, please see Figure 66, which also includes retired persons).

Figure 66: Contributing multiple insured and their health insurance institutions, as per 30th April 2016, based on data from HVSV



Social security legislation for multiple insured persons

The obligation to contribute exists up to a maximum contribution base.³⁴ If the total sum of contributions exceeds the (annual) maximum contribution base, either the differential assessment claim (ex-ante) or the refund of contributions (ex-post) can avoid payment of disproportionate amounts (i.e. above the maximum contribution base). A precondition for the refund is that the sum of all contribution bases for the compulsory insurance in the respective year exceeds the 35-fold daily amount of the maximum contribution basis for the compulsory insurance (for 2017, this results in €5,810.00 per month).³⁵

In the case of health insurance, 4% of the excess amount that transcends the maximum threshold of the ASVG contribution is refunded, as this comprises the employee's as well as the employer's contribution, which equals 3.87% and 3.78% respectively³⁶. In contrast, GSVG-/FSVG-/BSVG-contributions (i.e. commercially or free-lancing self-employed persons, or farmers) get refunded in full.³⁷

³⁴ (103)

³⁵ Bäuerliches Beitragswesen im Überblick

³⁶(104)

³⁷ SVA Info „Mehrfachversicherung Pensionsversicherung“, 2016

However, the respective applications normally have to be actively filed, which not all multiple insured persons will do. The application for refunding the health and unemployment contributions needs to be submitted to one of the insuring health insurance carriers. The application must be submitted until the end of the third calendar year, following the respective contribution year. If this application is also filed for the following contribution years, it is valid for as long as the insured person is registered for compulsory insurance with this health insurance carrier.

The occurrence of exceeding contributions may be avoided by applying for the differential assessment claim. Based on the ASVG contribution base, the GSVG-/FSVG- contribution base is set at a level that is likely to eliminate an exceeding contribution. Hence, a (partial) exemption from the GSVG obligation to contribute takes place. Furthermore, multiple insured persons secure insurance periods in every pension system of their insurances. However, in order to claim the pension, insurance months, which were acquired in parallel, can only be claimed once. This means that insurance months have to be assigned to one of the pension systems. For this purpose the hierarchy ASVG – GSVG – BSVG applies. 11.4% of the amount which was paid in surplus (above the maximum threshold) gets refunded for the ASVG, while for the GSVG/FSVG/BSVG, the full excess contribution (i.e. the employee part) is reimbursed.

To date, the so-called wage-sum-procedure has been utilised, where the employer calculates and pays the monthly contribution for all of his/her employees (including both, the employee and the employer contribution fees), without the contributions being allocated to the single person. Hence, the monthly contribution statement is adequate proof, i.e. the names of the employees do not need to be indicated, yet only the wage-sums suffice, which are broken down into contribution- and settlement-groups. Only after the end of the calendar year the pay-slips and the statement of contribution bases have to be created, which comprise the contribution basis for each insured person.

On 1st of January 2019, the monthly contribution base notification (mBGM) will replace this system, for which the legal framework is set by the reporting-obligation Act.³⁸ The mBGM means a complete system transformation for the employers and the social insurance carriers, enabling high quality and more timely data about monthly contributions. Consequently, in future, data will be available more promptly and not only after the end of the calendar year. More specifically, the mBGM represents a simplification of applications and a decrease in having to report redundant data. In addition, this makes changes in the

³⁸ (105)

insurance history more transparent, errors are avoided due to a clearing system, and the contribution groups are replaced by a new tariff-system.³⁹

Multiple insured civil servants

For civil servants, the situation is slightly different. Civil servants, who simultaneously engage in a commercial activity, are also compulsory insured in the pension insurance - in accordance with the GSVG. Both, the minimum and the maximum contribution base apply, when establishing the contribution base according to the GSVG. The salary of civil servants does not influence the contribution base compliant with the GSVG.

This is differently dealt with in the health insurance: Besides the B-KUVG, the commercial activity leads to an additional compulsory insurance in line with the GSVG. Since 2006, the contribution base according to B-KUVG is credited to the GSVG minimum contribution base for health insurances. In case the contribution base (in accordance with B-KUVG and GSVG) exceeds the maximum contribution base and an applicable substantiation is available, the contribution base according to GSVG must be set temporarily at most to the difference between B-KUVG and the maximum contribution base. The same applies to the employed persons, who are insured according to ASVG and B-KUVG.

However, if based on regional law, a sickness insurance claim exists for a sickness insurance institution (Krankenfürsorgeanstalt, KFA), then neither a crediting on the minimum contribution base according to GSVG, nor a restriction of the maximum contribution base apply⁴⁰. Therefore, for civil servants an addition of the contribution bases should be allowed within pension insurance and the KFA, in order to enable an automatic refund of contributions, exceeding the maximum contribution base.

In the work programme of the federal government for 2017/2018, which was decided in a special council of ministers on the 30th January 2017, a simplification of multiple insurances was planned, potentially taking effect from September 2017⁴¹: 'There exist many possible combinations of occupations. Persons who have multiple occupations that are gainful, i.e. employee and part-time farmer, pay multiple social security contributions and are multiple insured. The obligation to contribute persists up to the maximum contribution base. If the sum of the contribution bases exceeds the maximum contribution base, the exceeding contributions can be avoided by claiming differential assessment (in advance) or a refund of

³⁹ (106)

⁴⁰ WKO Info: „Beamte als gewerblich Selbständige“; January 2017

⁴¹ „Für Österreich . Arbeitsprogramm der Bundesregierung 2017/2018“ January , p.9

contributions (afterwards). In the future, an automatic difference assessment/refund of contributions through social security will be introduced in case of multiple occupations.

Allocation of contribution income and costs

Besides the issue of allocating contribution income among multiple insurances, another problem presents the fact that cost allocation is currently not regulated. In fact, the person with multiple insurances, may decide which insurance has to bear the costs of treatment (this may possibly be also influenced by the contractual partner, if he/she partners multiple social security institutions). Thus, distributing the contribution income in relation to the allocation of costs of the different health insurance carriers would be reasonable and fair.

Currently, if the multiple insurance is based on ASVG and GSVG, the GSVG contribution base is reduced by the differential assessment, independent of where the costs are allocated. In case of multiple insurances of multiple employments according to ASVG, employee contributions exceeding the maximum contribution base can get refunded. This happens at the carrier that receives the filed application for differential assessment.

The current situation is problematic, since numerous incentives that have to be taken into consideration exist. If left uncoordinated, these could potentially influence the cost allocation:

- Scope of service of the respective carrier
- Issue of user charges and cost sharing
- Issue of remunerating physicians providing the same service
- Amount of remuneration, since with physicians-of-choice 80% of the fees a contractual partner would charge, are refunded.

5.1.8 Policy options: Multiple insured persons in Austria

A simplification via automatic refunding for multiple insured persons and an internal cost allocation is considered a reasonable alternative to the current system of retrospective, manually filed reimbursement. The cost allocation should be based on an estimation of payment flows and not on single bills of the individual insured persons. The more services, rates and tariff models are harmonised, the easier it will be to obtain a mechanism that involves all health insurance carriers.

Single collection of contributions without a choice of fund

At present, multiple insured persons in Austria pay contributions to all funds they are compulsorily insured with. As the total contributions may exceed the maximum contribution bases, multiple insured must manually file yearly applications for reimbursement, in order to receive a refund of the excess payment. In addition, multiple insured can choose which carrier to charge for a good or service on a case-by-case basis, constituting an inequitable advantage compared to those insured with a single fund. For instance, multiple insured may avoid paying user charges that are prevalent across more “generous” funds, such as the BVA or SVA, while simultaneously making use of those funds’ greater benefits when necessary (e.g. in order to reduce waiting times or to receive greater allowances for specific services). This policy introduces a single location for the collection of contributions, in addition to keeping maximum contribution bases in place. This can either be in the form of an independent entity or by nominating regional funds to collect contributions on behalf of all funds, in order to simplify the administration process. As such, the refund for excess contributions could be automatically calculated through an official channel, without the need for manual applications.

Under this option, insured persons do not have a choice of fund. Instead, a hierarchy could be introduced to determine the fund membership of an individual. This could either be an absolute hierarchy of funds or a hierarchy based on the main income source of an individual. However, it must be noted that a system based on a hierarchy is only feasible if it does not undermine the financial position of a fund. Hence, further studies on the financial impact on funds need to be conducted prior to applications of this option.

Single collection of contributions with a choice of fund (sub-option)

This sub-option follows the same model as the option above, with the main difference that insured persons could choose their fund of preference, based on their professions. While this option does not entirely eliminate inequity in the system, it may reduce the former, as insured could only switch funds on an e.g. yearly basis, rather than intermittently charging different funds.

Multiple collections of contributions without a choice of fund

Under this option insured individuals continue to pay to multiple funds, however, the insured would be automatically assigned to a default fund. This constitutes the fund for which the insured pays the largest share of contributions and the insured is only entitled to benefits of the default fund. All carriers receiving contributions for the insured would re-direct these contributions to the respective default fund. In addition, the refund process for excess contributions could be automated, in order to reduce the

administrative burden of manual applications and to eliminate inconveniences to the insured. However, such a system is only feasible if it does not undermine the financial position of a fund, such as the SVB. Hence, prior to the application of this option, a study on the financial impact on funds needs to be conducted.

Multiple collections of contributions with a choice of fund (sub-option)

This sub-option follows a similar rationale to that outlined above, with the main difference that under Option 2a individuals have the option to choose a default fund to access services from, while the second carrier will conduct transfers of funds to the former. However, as in the case of previous options discussed, there are only partial improvements in equity.

Retrospective payments between funds

For this final option, one of the funds conducts retrospective payments to the second insurance carrier, which was predominantly used by the insured person to access services. This system constitutes a modification of the current mechanism in that it adds a compensatory mechanism to ensure the financial stability of funds. However, it must be noted that this option may be more difficult to implement and does not render the system more equitable.

Legal considerations

Some of the above options may cause problems with respect to the principle of self-governance: As long as there are different 'Versichertengemeinschaften' each of them based on the type of employment of the respective insuree, it will be difficult to justify that only one of them is receiving all the contributions, most of all if that particular carrier is determined more or less 'by chance' (including a choice by the insurees themselves).

So if substantial harmonization and/or amalgamation of carriers (which should be the main options) cannot be achieved, it seems that a risk-adjustment-system taking into account also the special situation of multiple-insured persons would be a better and more equitable option.

5.2 Defining benefits

5.2.1 Overview

The move towards universal health coverage raises key policy questions, such as how to design and regulate benefits to ensure a financially sustainable coverage of services for all insured persons (107). Most countries have developed a rationale and mechanism to guide the composition of a benefits basket, which specifies the full or partial coverage of publicly financed health care services, activities and goods accessible to all residents in social and national health systems. These benefits can be defined through two approaches and often countries employ a mix of both, depending on categories of goods and services: (1) an ‘open specification’ with a general description of benefits outlining eligibility for these benefits, and (2) ‘closed specification’ with detailed (positive) listings of all benefits that are covered through public financing (108). However, approaches and the extent of regulation differ between countries, highlighting ambiguities and challenges in creating a common benefits package. The following section provides a high-level overview of the regulation of service coverage in Belgium, France, Germany, Netherlands and Switzerland, and concludes with a brief comparison to the Austrian system.

5.2.2 Regulation of health insurance benefits in Europe

Belgium

Regulated benefits

Almost the entire Belgian population is insured with one of the seven health insurance entities. These include five national associations, which can be broken down into approximately 60 local sickness funds, one public fund for individuals not wishing to join any of the five associations, and a separate fund for railway employees. All insurance funds must offer the legally defined compulsory benefits package. Thus, differences in services are only present in complementary or supplementary insurance (109).

Service coverage in Belgium is based on a closed specification system with detailed positive listing (108). As such, the content of the compulsory package is specified in the national fee schedule (*nomenclature*), which lists an identification number, the contractual fee and reimbursement rate for more than 8,000 services. Negotiations on the inclusion of new treatments and exclusion of obsolete ones between the representatives of the health insurance funds and healthcare providers take place yearly or biennially (109). In order to inform and support evidence-based coverage decisions, the Belgian Health Care Knowledge Centre (KCE) performs a number of health technology assessments. However, the KCE merely

issues non-binding recommendations and is not involved in the actual decision-making or implementation process of the benefit basket (110).

The compulsory benefits package is broad and includes services such as medical care (e.g. GPs, specialists, psychiatric care, hospital care), physiotherapy, prescription drugs, most dental care, home and nursing home care, among many others (109). Certain services, such as alternative therapies (e.g. homeopathy, acupuncture) are not covered by the basic insurance, while plastic surgery, spectacles and orthodontics may be reimbursed under specific conditions (109).

Optional benefits

In addition to the compulsory benefit package, sickness funds may offer supplementary or complementary insurance. Content and insurance policies for services, such as optic and dental care, alternative medicines and certain co-payments for hospital care, differ between providers, leaving room for competition (109).

France

Regulated benefits

Eighty-six per cent of the French population are covered by the general statutory health insurance (SHI) scheme for salaried workers in the private sector (also applicable to legal residents not covered by other funds). The remaining are members of the SHI scheme for self-employed (6%) or members of the scheme for farmers and agricultural workers (5%). The content of the compulsory benefits package is defined at the national level and applies to all SHI schemes (111). Hence, differences in services are only present in complementary or supplementary insurance.

Similar to Belgium, the service coverage in France is based on a closed specification system with a detailed positive listing of more than 8000 covered benefits (108). These positive lists are defined at the national level and apply to all regions. The Ministry of Health specifies the positive list for drugs and medical devices for both outpatient and inpatient care, while the statutory health insurance (UNCAM) is responsible for the listing of medical procedures (111). The coverage decisions are evidence-based, following a health technology assessment of the effectiveness and/or cost-effectiveness of all interventions by designated committees of the independent French National Authority for Health (HAS) (112).

Overall, the benefits package consists of outpatient- (e.g. GPs, specialists, dentists, and midwives) and inpatient care (e.g. hospital care, rehabilitation or physiotherapy), diagnostic services and therapies (e.g. physio-, speech therapy) if prescribed by doctors. Pharmaceutical products, medical appliances and

prostheses are covered if these are included in the national positive list and if prescribed by a physician. Health-care related transport is reimbursed in the case of prescription. Cosmetic surgery, spa treatments or services of uncertain effectiveness are not included in the basic package (111).

Optional benefits

While the SHI provides a broad benefit package, coverage is generally not 100% and varies between services. Therefore, insured persons can take out complementary insurance to cover all or parts of the residual costs or supplementary insurance for benefits not covered by the SHI (111).

Germany

Regulated benefits

Eighty-seven per cent of the population in Germany are insured with one of the 113 statutory health insurance funds (GKV funds), while 11% have opted for substitutive private health insurance (PKV) (113). The Contribution rates vary between sickness funds, however, 95% of GKV benefits are statutorily regulated through Social Code Book V (*SGB V*) (114). The statutory regulation of services also applies to the basic tariff, which private health insurers are obliged to offer and which encompasses compulsory benefits analogous to the benefit package covered by the GKV.

As stated in legislation (§12 SGB V), benefits can only be claimed for services that are adequate, appropriate and economical. It is the Federal Joint Committee's (FJC) task to evaluate and determine the specific medical and medico-technical examination and treatment methods for inclusion in the service catalogue (115). For instance, examination and treatment methods for the outpatient sector must be approved by the FJC for their diagnostic or therapeutic benefit, medical necessity and effectiveness. Previously approved services can be excluded from the catalogue if they no longer reflect the current state of scientific evidence. In contrast, all services performed during an inpatient stay are automatically covered, unless a specific treatment method has been explicitly precluded due to insufficient therapeutic benefit (115).

The comprehensive benefits package of the sickness funds encompasses preventive and early detection measures, essential medical treatment (i.e. outpatient and inpatient care, and rehabilitation, including surgical dressings, therapeutic appliances and medication), therapies (e.g. psycho-, physio-, speech- and ergotherapy), medically necessary transportation, dental care, and sickness benefits. Additional services include insurance coverage for stays abroad in EU member states and choice of doctors and specialists

(116). Although alternative treatments, like homeopathic products, are not part of the statutory benefits package, they are covered by a number of sickness funds.

Optional benefits

Differences in benefits across GKV insurers are due to optional tariffs (*Wahltarife*), which were introduced as a way to increase competition in 2007 (117). There are two types of optional tariffs: the mandatory and the voluntary optional tariff. The mandatory optional tariff is regulated through legislation (§53 SGB V), which means that sickness funds must offer the following four service options as part of the tariff: integrated care, structured treatment programmes for chronically ill, sickness benefits for the self-employed, and family physician care (118). Via voluntary optional tariffs, sickness funds can advertise a number of non-regulated services, such as tariffs with deductibles, contribution refunds and alternative medicines. In addition to the services offered by the statutory insurance, individuals can opt for supplementary private health insurance (118).

Netherlands

Regulated benefits

There are three types of health insurance in the Netherlands: the obligatory basic insurance for essential curative care, the obligatory national insurance for long-term and unaffordable care, and the optional supplementary insurance. All individuals must sign up with a private non-profit insurance provider to obtain the non-risk-based basic health insurance for curative care, which is harmonised across health insurers (119).

Service coverage in the Netherlands is based on an open specification system with a general description of benefits. The content of the basic benefits package is regulated by the central government, based on advice from the National Healthcare Institute (ZIN) (120). Following the main criteria, services should be essential, effective, cost-effective and unaffordable for individuals. Other factors, such as budget and political considerations may further influence the decision-making (121). However, not all treatments are evaluated or reviewed. Instead, the Healthcare Insurance Board defines a list of priorities for the benefits package agenda, which is held bi-annually (121).

In line with the Health Insurance Act 2015, the benefit package comprised, among other services, medical care (i.e. GPs, specialists, midwives, mental care and hospital care), home nursing and personal care, therapies (e.g. physio- speech-, exercise- and occupational therapy), pharmaceuticals and medical aids and devices, maternity care, transportation of sick patients, and dental care (for children until the age of

18; persons aged 18 and older are eligible for specialist dental care and a set of false teeth). Also included were quit-smoking programmes and geriatric rehabilitation care (120).

Optional benefits

Individuals may also take out supplementary coverage for additional services not included in the basic package. Supplementary insurance is offered by various competing providers and comprises health services such as dental care for adults aged 18 and over, alternative therapies and medicine, contraception, glasses and contact lenses (122).

Switzerland

Regulated benefits

All Swiss residents must take out compulsory basic insurance offered by one of approximately 60 private non-profit health insurance funds (123). Contribution rates vary between insurance providers and geographic regions, however, insurers are obliged to offer the same basic compulsory health insurance (*obligatorische Krankenpflegeversicherung*) to any person, regardless of income, age, sex, or health condition (124).

The catalogue of benefits is broadly defined by the Swiss Health Insurance Act (KVG/LAMal), which stipulates that services must be effective, appropriate and cost-effective (Art. 32 KVG/LAMal). Additionally, the federal government employs explicit positive lists and lists of medicines not eligible for reimbursement to specify certain contents of the package, such as pharmaceuticals and medical devices. However, most physician services are not formally assessed, which can lead to coverage of services with little scientific proven value (125).

The basic insurance only covers services that are provided in the resident's state. However, exemptions include emergencies and compelling medical reasons (e.g. complex interventions such as organ transplantations) (124).

In practice, the package comprises most GP, chiropractor, midwife and specialist services, inpatient care, pharmaceuticals and medical devices, laboratory tests, as well as therapies (e.g. physio- and speech-therapy, nutritional and diabetes counseling, outpatient care by nurses, occupational therapy, and psychotherapy if prescribed by a physician). Costs for transport or rescue are partially paid for, while coverage for long-term care is based on medical necessity. Dental care is covered in the case of severe illness of the masticatory system or if related to care of other diseases (e.g. leukemia). The positive list also specifies a number of prevention and examination measures (e.g. pap smears, mammography

screening and selected vaccinations) (124,125). As of 2017, the benefits package will also cover homeopathic medicines.

Optional benefits

To broaden the basic coverage, the insured can take out private supplementary or complementary insurance with any insurance provider. This type of insurance comes at an additional cost with risk-based premiums. Benefits and policies vary across funds and are difficult to compare. Generally, these benefits can be categorised into outpatient- and inpatient-related supplementary services. Supplementary outpatient coverage may include orthodontic treatment, alternative medicine, and spectacles/contact lenses. Supplementary coverage for inpatient stays may comprise stays in a private or semi-private hospital ward, and choice of doctor (e.g. senior physicians) (124,125).

5.2.3 Regulation of benefits in Austria

Status quo

About 80% of the Austrian population are insured with one of the nine regional insurance funds (GKKs), with the remainder being members of a specialist- and/or company insurance funds. The contribution rates for regional funds are uniform and insured persons are automatically assigned to a specific fund, based on the place of residence and occupational group. Although the contribution rates are the same across regional funds, the benefits are not fully harmonised and can vary for both benefits in-kind and in-cash.

The guiding rationale is that treatment must be sufficient and appropriate, however, it should not exceed the necessary. Furthermore, there is a positive list for outpatient drugs based on evidence-based technology assessments. However, there are no additional positive lists or lists of interventions not eligible for reimbursement that specify covered benefits for outpatient- or inpatient care. Instead, each insurance fund specifies a statute (*Satzung*), which lists their covered services. In addition, the Main Association of the Social Insurance Funds (Hauptverband der Sozialversicherungsträger, HVSV) is legally obliged to define a template statute (*Mustersatzung*). As such, the HVSV can render a service obligatory, however, a unanimous vote by all insurance funds is required.

Service coverage in Austria is based on an open specification system with a general description of benefits. For instance, the General Social Security Act (ASVG) defines an array of broad services that are covered by social health insurance. According to the legislation, the Social health insurance covers the following services: outpatient - (i.e. general practitioners and specialists), inpatient- and medical nursing care,

rehabilitation, therapies (psycho- and speech therapy), pharmaceuticals and therapeutic aids, maternity and sickness benefits, health promotion and illness prevention, and a number of basic dental services, among others. Generally, complementary medicine methods, such as homeopathy, are not included in the benefit basket (126).

Comparison of the regulation of health benefits plans across European countries

As outlined in the country descriptions, the six countries differ in type, approach and extent of regulation pertaining to benefits. Similar to Austria, most countries in this analysis employ a guiding principle and an open specification with a general (functional) description of benefits, which is outlined in legislation. Such open specifications may be ambiguously defined and therefore undermine to some extent the harmonisation of benefits, as is the case in Switzerland, for example. However, it must be noted that not only the benefits packages, but also the contribution rates/premiums may vary between funds in Switzerland, Netherlands and Germany. In contrast, the contribution rates for regional funds in Austria are harmonised, whilst this is not necessarily the case for benefits packages. In addition, positive lists are generally used to specify coverage for prescription drugs, although in Austria the list only comprises outpatient drugs. France and Belgium are the only countries in this sample to produce detailed positive lists of more than 8,000 outpatient and inpatient goods and services, enhancing the harmonisation of benefits across insurance providers. The table below provides an overview of the regulation of benefits across the six European countries.

Table 26: Overview of the regulation of benefits across six European countries

	Austria	Belgium	France	Germany	Netherlands	Switzerland
Regulated benefits						
Legislation						
Source	General Social Security Act (ASVG)	Law on Compulsory Health Insurance and Allowances (<i>Loi relative à l'assurance obligatoire soins de santé et indemnités</i>)	Social Security Code (<i>Code de la sécurité sociale</i>)	Social Code Book V (<i>Sozialgesetzbuch V, SGB V</i>)	Health Insurance Act (<i>Zorgverzekeringswet</i>)	Swiss Health Insurance Act (KGV, LaMal)
Coverage criteria	Treatment must be sufficient and appropriate, however, it should not exceed the necessary (§133(2) ASVG)	Medical goods and services need to be included in the positive list	Medical goods and services need to be included in the positive list	Benefits can only be claimed for services that are adequate, appropriate and economical (§12 SBG V)	Services should be essential, effective, cost-effective and unaffordable for individuals (1992/1995 Dutch Committee on Choices in Health Care (Dunning Committee))	Services must be effective, appropriate and cost-effective (Art. 32 KVG/LAMal)
Approach to define the benefits package	Open specification with a general (functional) description of benefits	Closed specification system with detailed positive listings	Closed specification system with detailed positive listings	Open specification with a general (functional) description of benefits	Open specification with a general (functional) description of benefits	Open specification with a general (functional) description of benefits
Mechanism to define benefits						
<i>Outpatient services</i>						

	Austria	Belgium	France	Germany	Netherlands	Switzerland
	Functional description of benefits; and a non-exhaustive positive list defined by each carrier	Detailed positive list	Detailed positive list	Functional description of benefits; and positive list (less detailed)	Functional description of benefits; and list of medicines not eligible for reimbursement	Functional description of benefits; and list of medicines not eligible for reimbursement
<i>Prescription drugs</i>	Positive list	Positive list	Positive list	Positive list	Positive list	Positive list
Regulatory body	Each insurance fund specifies a statute (<i>Satzung</i>) that lists the services covered. The HVSV is legally obliged to define a template statute (<i>Mustersatzung</i>) and can make some services obligatory. In addition, there are some HTA processes for prescription drugs.	Representatives of the sickness funds and of the health care professionals negotiate the fee schedule yearly or biennially KCE can make recommendations	Positive list defined at national level Drugs and medical devices added to list by MoH Procedures added by SHI Committees within HAS provide advice based on HTA results	Federal Joint Committee (FJC) Based on HTA results	Central government	Federal government Not all treatments evaluated/reviewed. The Healthcare Insurance Board defines a list of priorities for the package agenda, which are reviewed bi-annually
Optional benefits						
Type of optional benefit	Insured can take out supplementary private health insurance.	Sickness funds and private funds may offer supplementary or complementary insurance.	Complementary and supplementary insurance can be taken out with private insurers.	Statutory insurance: <ul style="list-style-type: none"> • Mandatory optional tariffs • Voluntary optional tariffs. 	Private supplementary insurance is offered by various competing providers.	Private supplementary insurance can be taken out with any provider.

Austria	Belgium	France	Germany	Netherlands	Switzerland
			Supplementary private health insurance.		

Furthermore, a comparison of eight European countries by Van der Wees *et al.* (2014) showed that a number of countries are increasingly relying on evidence-based strategies to define the benefit package and to keep it affordable (e.g. Belgium, France and Germany) (108). Regardless of the approach and type of health system, packages generally appeared similar between countries. The key differences in coverage were identified for dental care and physical therapy (108). For instance, routine dental care for adults is not covered in the Netherlands and Switzerland (see the table below for the selected comparison of services for adults covered by public financing across European countries by Van der Wees *et al.* (2016) (127)). However, the scope and extent of differences in service provision across funds within countries remains to be examined.

Table 27: Health services for adults covered by public financing. Based on Van der Wees *et al.* (2016)⁴²

Services	Austria	Belgium	France	Germany	Netherlands	Switzerland
Primary care physician	✓	✓	✓	✓	✓	✓
Medical specialist	✓	✓	✓	✓	✓	✓
Maternal care	✓	✓	✓	✓	✓	✓
Hospital care	✓	✓	✓	✓	✓	✓
Rehabilitation	✓	✓	✓	✓	✓	✓
Prevention	✓ ⁴³	✓	✓	✓	✓	✓
Dental care	✓	✓	✓	✓	✗	✗
Mental healthcare	✓	✓	✓	✓	✓	✓

⁴² Comparisons in this table refer to adults aged 19-60 without chronic disease or low income.

⁴³ Partial coverage, including e.g. general preventive check ups and gynecological check ups . Immunisations and other screenings not fully covered.

Services	Austria	Belgium	France	Germany	Netherlands	Switzerland
Physical therapy	✓	✓	✓	✓	✓ ⁴⁴	✓
Occupational therapy	✓	✓	✓	✓	✓	✓
Speech therapy	✓	✓	✓	✓	✓	✓
Medical devices	✓	✓	✓	✓	✓	✓
Cosmetic surgery ⁴⁵	✗	✗	✗	✗	✗	✗

5.2.4 The role of HTA in defining benefits in Europe and implications for Austria

Overview

The purpose of this section is to examine the Health Technology Assessment (HTA) processes in European countries with publicly funded social health insurance systems and attempt to draw some lessons for Austria. The study countries (and their respective agencies) under examination are England (National Institute for Health and Care Excellence, NICE), France (Haute Autorité de Santé, HAS), Germany (Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen, IQWiG), and the Netherlands (Zorginstituut Nederland, ZIN (formerly College voor zorgverzekeringen, CVZ) before trying to draw some comparisons with Austria.

With regards to the responsibilities and structure of national HTA agencies, across all study countries HTA agencies are autonomous and their role is advisory. In that capacity, they assess and appraise the value of health care interventions and make recommendations for coverage. Usually, a technical group is responsible for early assessment of evidence following which an expert committee appraises the request

⁴⁴ Physical therapy in the Netherlands is only covered for certain chronic conditions after 20 sessions.

⁴⁵ Not covered on a general basis; may be covered in some specific instances.

for coverage and produces recommendations for the ultimate decision maker. The topic selection process is generally not fully-transparent, with most agencies predominantly assessing new health care interventions that are expensive and/or with uncertain clinical benefits. In all countries, official country-specific pharmacoeconomic evaluation guidelines are in operation, mainly concerning methodological and reporting issues (128,129). Although some of the HTA agencies tend to focus on pharmaceutical products, others evaluate all types of health care interventions, therefore the term “pharmacoeconomic” might not be representative of the types of guidelines in place, in which case it might be more appropriate to be referred to as “methods for HTA”.

In terms of evidence and evaluation criteria considered, generally all study countries assess the same types of evidence, however the precise information and value parameters analysed and the way they are evaluated differ across countries. Typical data sources widely used by all countries include scientific studies (e.g. clinical trials, observational studies), national statistics, clinical practice guidelines, registry data, surveys, expert opinion and evidence from pharmaceutical manufacturers (130).

In terms of methods and techniques applied and in addition to clinical benefit assessment, all countries adopt some type of economic evaluation technique (mainly Cost-utility analysis or Cost-effectiveness analysis) as an analytical method to derive the value of new technologies, besides France and Germany, both of which formally used to apply solely a comparative assessment of clinical benefit as the preferred methodology but with economic evaluation progressively becoming more important as of 2013.

All countries acknowledge that randomized controlled head-to-head clinical trials is the most reliable and preferred source of treatment effects (i.e. outcomes), with data from less-rigorous study designs being accepted in most study countries (England, France, Germany) e.g. when direct RCTs for the comparators of interest are not available (130–132). Also, most agencies require systematic literature reviews to be submitted by manufacturers as a source of data collection and carry out their own reviews. A meta-analysis of key-clinical outcomes is recommended for pooling the results together given the homogeneity of the evidence in England and Netherlands (130–132). If evidence on effectiveness is not available through clinical trial data, then France and Netherlands allow for a qualitative extrapolation based on efficacy data, with, England applying both qualitative and quantitative modelling. In both England and Netherlands, short-term clinical data are extrapolated also if data on long-term effects are absent.

In terms of resources used, and in addition to direct medical costs, France considers all relevant costs including direct non-medical and indirect costs, both for patients and carers (129,130); however, only direct costs are considered in the reference case analysis and incorporated in the ICER (133). Germany

also takes into account informal costs and productivity gains separately as a type of benefit, whereas England additionally considers cost of social services. In the Netherlands, the Health Care Insurance Board's "Manual for cost research" applies for the identification, measurement and valuation of costs; pharmacoeconomic evaluations need to include both direct and indirect costs inside and outside the healthcare system (134).

In all study countries both costs and benefits are discounted (129,131,135,136), and uncertainty arising due to variability in model assumptions is investigated usually in the form of sensitivity analysis. No explicit, transparent, or clearly defined cost-effectiveness thresholds exist in any of the countries except for England.

Finally, in terms of the decision outcomes and implementation, evaluation outcomes are primarily used to inform coverage decisions relating to the reimbursement status of the health care interventions but also pricing decisions, either directly or indirectly. Generally the time needed for the evaluation of a health technology to be completed differs from country to country. However, in line with the EU Transparency Directive, all countries must have reached a decision on pricing and reimbursement within 180 days post marketing authorization (137). In all countries the final decision report is publicly available, usually through the HTA agency's website (137,138), and the policy implication of the evaluation outcome relates to the pricing and reimbursement status of the technology: reimbursement (List), no reimbursement (Do Not List), or conditional reimbursement (List With Restrictions) (137,139). However, all countries apply access restrictions usually relating to specific indications or specific population sub-groups. Most countries employ dissemination procedures in order to support the implementation of their decisions, including prescribing guidelines and national drug formularies (140), having appeal mechanisms in place in case of dissent, revising their decisions either according to fixed time schedule or on a rolling basis (131,137).

HTA processes in Europe

England

In England, the Secretary of State for Health has indicated to NICE a number of factors that should be considered in the evaluation process: (i) the broad balance between benefits and costs (i.e. cost-effectiveness); (ii) the degree of clinical need of patients; (iii) the broad clinical priorities for the NHS; (iv) the effective use of resources and the encouragement of innovation; and (v) any guidance issued by the Secretary of State (141–143). Decisions are supposed to reflect society's values, underlined by a fundamental social value judgment (144). The degree of unmet clinical need is a formal criterion taken

into account, at least partially being reflected by the availability of alternative treatments (132,145). NICE acknowledges that rarity has a key role in the assessment of orphan medicinal products and NICE's Citizens' Council has stated that society would be willing to pay more for rare and serious diseases (146). The severity of the disease is taken into account mainly through the special status of life-extending medicines for patients with short-life expectancy as reflected through the issuing of supplementary advice of life-extending end-of-life (EOL) treatments by NICE (132,147).

All clinically relevant outcomes are accepted with final clinical outcomes (e.g. life years gained) and patient HRQoL being preferred over intermediate outcomes (e.g. events avoided) or surrogate endpoints and physiological measures (e.g. blood glucose levels) (131,148–150); particular outcomes of interest include mortality and morbidity. Safety is mainly addressed through the observation of adverse events (132). Uncertainty is addressed explicitly through quality of evidence, implicitly, through preference for RCTs and indirectly, through rejection of submissions if evidence is not scientifically robust.

The encouragement of innovation is an important consideration and by definition, the incremental therapeutic benefit as well as the innovative nature of the technology are formally taken into account as part of the product's incremental cost effectiveness ratio (ICER) (132). Although productivity costs should be excluded, cost of time spent on informal caregiving can be presented separately if this care might otherwise have been provided by the NHS or the Personal Social Services (PSS) (151).

As already reflected through NICE's working principles, the relative balance between costs and benefits (i.e. value-for-money) and the effective use of resources should be taken into account in England (e.g. through the explicit cost-effectiveness criterion) (141). Some studies also suggest that the impact of cost to the NHS in combination with budget constraints (budget impact considerations) are taken into account alongside the other clinical and cost-effectiveness evidence (139,143,152–154). Besides the notion of clinical need as reflected through NICE's principles, other equity considerations include the 'need to distribute health resources in the fairest way within society as a whole' and the aim of 'actively targeting inequalities', both of which are explicitly mentioned by NICE as principles of social value judgements (141). Equality, non-discrimination and autonomy are other explicit ethical considerations (145).

The preferred type of economic evaluation is CUA with cost per QALY gained being the favoured health outcome measure, but CEA may also be accepted if there is supporting evidence to do so (as in the case that the use of QALY for a particular case seems inappropriate) (129,130,136,141,142,150,155–157). Although evidence suggests the existence of a threshold ranging somewhere between £20,000 and £30,000 (149,155,158,159), it is evident that such a threshold range may not be strictly applied in practice,

with some products with a cost per QALY below these ranges receiving negative coverage recommendations and other products above these ranges ending up with positive recommendations (150,160,161). Indeed, several studies point towards the existence of a threshold range based on which additional evidence on several factors is required for the recommendation of technologies with an ICER of above £20,000, and even stronger evidence of benefit in combination with explicit reasoning required for the coverage of technologies with an ICER above £30,000 (132,137,142,143,158,162). Indeed, additional criteria may apply as part of NICE's deliberative process that may push the acceptable ICER beyond the acceptable range; these criteria include severity of the disease, rarity, end-of life criteria, innovativeness of the technology, and equity, particularly in the context of disadvantaged populations and paediatric use. Despite the historically accepted ICER range of £20,000-£30,000 per QALY, a recent study using data on primary care trust spending and disease-specific mortality estimated an empirical based "central" threshold of £12,936 per QALY, with a probability of 0.89 of less than £20,000 and a probability of 0.97 to be less than £30,000 (163).

Reimbursement status has no direct effects on price, but indeed price indirectly affects the reimbursement status of the pharmaceutical in question as it will have an impact on the ICER. Major and minor restrictions exist though: the former relate to cases where the technology is indicated only for second-line treatment (and beyond) or for only specific sub-population, and the latter relate to the need for specialist supervision or treatment monitoring (143); performance based agreements (or response rules) also exist, especially in regards to the use of biologics and cancer drugs, according to which a pre-specified clinical (endpoint) condition must be reached at a specific post-assessment time point for the coverage of the technology to continue (164).

The NHS in England is legally obliged to implement NICE recommendation and guidance that has been accepted by the Secretary of State for Health and fund the recommended technologies within three months from the outcome of the decision, possibly by displacing resources from the use of other technologies (132,150). However, NICE may revise technology appraisals once new evidence becomes available, with the average rate of positive recommendations (with or without restrictions) being around 90% (165).

France

In France the dominant model of technology assessment and appraisal relates to (comparative) assessment of clinical benefit, in combination with selective use of economic evaluation. Assessment of (comparative) clinical benefit is conducted through the use of two key indicators, namely, the product's

overall medical benefit (*Service Médical Rendu*, SMR) and the improvement of medical benefit (*Amélioration du Service Médical Rendu*, ASMR); the former determines reimbursement, while the latter informs pricing decisions. The SMR provides a ranking of a new product's absolute benefit, regardless of existing alternatives, ranging from important to insufficient (4 categories); in principle, the higher the SMR, the higher the rate of reimbursement. The ASMR provides a ranking of the new product's comparative benefit relative to existing therapies, ranging from 'breakthrough' (ASMR I) to 'no improvement in clinical benefit' (ASMR V) for a total of 5 categories. As of October 2013, economic criteria have been introduced with the Commission for Economic Evaluation and Public Health (CEESP) evaluating the cost-effectiveness (without a cost-effectiveness threshold in place) of products assessed to have an ASMR I, II or III that are likely to impact social health insurance expenditures significantly (total budget impact greater than EUR 20 million), being used by the Economic Committee for Health Products (CEPS) in its price negotiations with manufacturers (166). Nevertheless, and under this current framework, these economic evaluations do not have the same impact on price negotiation with ASMR, which are directly linked with pricing but instead their role is limited to a consultative one. Both the severity and the existence of alternative treatments are acting as formal criteria, thus essentially defining the concept of 'need' (145). Severity is considered as part of the SMR, taking into account symptoms, possible consequences (including physical or cognitive handicap) and disease progression (in terms of mortality and morbidity) (167). The existence of alternatives is scored against a categorical 2-level scale (Yes vs. No) (133,168).

Clinical evidence (relating to therapeutic efficacy and safety) acts as the most important formal criterion of the evaluation process (137). The product's medical benefit or medical service rendered (SMR) relates to the actual clinical benefit of the drug, responding to the question of whether the drug is of sufficient interest to be covered by social health insurance. It takes into consideration the following criteria: (a) the seriousness of the condition; (b) the efficacy of the treatment; (c) side effects of the drug; (d) its place within the therapeutic strategy given other available therapies; and (e) its interest for public health (129).

Clinical novelty is considered by definition through the product's improvement of medical benefit (*ASMR relating to the* relative added clinical value of the drug which informs the pricing negotiations. Additional innovation characteristics relating to the nature of the treatment (e.g. differentiating between symptomatic, preventive and curative) are also considered but as a second line of criteria (131,137,167,169). In terms of socioeconomic parameters, 'expected' public health benefit acts as another explicit dimension via an indicator known as public health interest ("Intérêt de Santé Publique",

ISP), which is assessed and scored separately by a distinct committee as part of the SMR evaluation but is not used often (145,167,169,170).

Until recently, cost was not acknowledged as an explicit or mandatory criterion, but budget impact, while not mandatory, has always been recommended highly (167). Although the expert committee had been reluctant to use cost-effectiveness criteria in the evaluation process (137,153), following the by-law of 2012 (which took effect in 2013) the role of economic evidence was strengthened (168). The CEESP gives an opinion on the efficiency of the drug based on the relative added clinical value (ASMR) of alternative treatments. Additional explicit parameters considered in France include the technology's place in the therapeutic strategy mainly in relation to other available treatments (i.e. first-line treatment vs. second-line treatment etc.), and the technology's conditions of use (133,167,168).

Comparative assessment of clinical benefit incorporating final endpoints as an outcome measure used to be as the single evaluation procedure in place. However, economic analysis of selected pharmaceuticals with expected significant budget impact is continuously being considered more formally, especially if its choice is justified and any methodological challenges (especially associated with the estimation of QALYs) are successfully addressed (129,130,133,135,145,168). The choice between CEA and CUA depends on the nature of the expected health effects (if expected significant impact on HRQoL then CUA, otherwise CEA).

By assessing the evidence of the product's medical benefit or medical service rendered (Service Médical Rendu, SMR), the improvement in medical benefit and added therapeutic benefit (Amélioration du Service Médical Rendu, ASMR) are derived, which determine the reimbursement status and influence the price level of the product respectively, therefore only drugs with additional therapeutic value can "obtain a higher reimbursement basis" (137). However, drug registration is subject to renewal every 5 years and a drug may also be subject to post-registration studies.

Germany

In Germany the Act to Reorganize the Pharmaceuticals Market in the Statutory Health Insurance (SHI) System [Gesetz zur Neuordnung des Arzneimittelmarktes in der gesetzlichen Krankenversicherung (AMNOG)] came into effect on 1 January 2011. Since then, all newly introduced drugs are subject to early benefit assessment. Pharmaceutical manufacturers have to submit a benefit dossier for evaluation by the Institute for Quality and Efficiency in Health Care (IQWiG). A final decision is made by the Federal Joint Committee (Gemeinsame Bundesausschuss, G-BA). Benefit for new drugs encompasses the "patient-

relevant therapeutic effect, specifically regarding the amelioration of health status, the reduction of disease duration, the extension of survival, the decrease in side effects or the improvement in quality of life” (171). Importantly, all new drugs are reimbursed upon marketing authorization and benefit assessment mainly determines price rather than reimbursement status. There are no pricing restrictions one year post-MA. Severity is considered as part of added (clinical) benefit assessment. The clinical assessment is based on “patient-relevant” outcomes, mainly relating to how the patient survives, functions or feels, essentially accounting for the dimensions of mortality, morbidity and HRQoL (172).

Similarly to France, all clinically relevant outcomes are considered and final clinically meaningful outcomes (e.g. increase in overall survival, reduction of disease duration, improvement in HRQoL) are preferred over surrogate and composite endpoints (129,130,135,148,172). HRQoL endpoints are considered if measured using validated instruments suited for application in clinical trials [24, 32]. With regards to uncertainty, the Institute ranks the results of a study according to “high certainty” (randomized study with low bias risk), “moderate” (randomized study with high bias risk), and “low certainty” (non-randomized comparative study).

The complete evidence base on value is then assessed and a conclusion is reached on the probability of the (added) benefit and harm graded on a six level scale, notably, (a) major added benefit, (b) considerable added benefit, (c) minor added benefit, (d) non-quantifiable added benefit, (e) no added benefit, and (f) lesser benefit (167,172). The quality of the evidence is assessed on a three-level scale, as follows: (a) proof, (b) indication of proof and (c) hint of proof. Following one year of free pricing the G-KV Spitzenverband either (a) puts the product in a reference group if there is no proof of evidence of significant added benefit, or (b) if there is major or significant added benefit, the price is negotiated with the outcome being a price which is between the comparator and the initial list price of the new product.

Clinical novelty is considered implicitly as part of the consideration of added therapeutic benefit for premium pricing. Ease of use and comfort (if relevant for morbidity or side effects) can be reflected indirectly through treatment satisfaction for patients which can be considered as an additional aspect, however not as an explicit factor, similarly to the nature of treatment/technology (173). Public health benefit is not explicitly considered but only partially reflected through the requirement from manufacturers to submit information on the expected number of patients and patient groups for which an added benefit exists as well as costs for the public health system (statutory health insurance) (167,173). All direct costs have to be considered, including both medical and non-medical (when applicable), whereas indirect costs are not a primary consideration but can be evaluated separately if they are substantial, with

productivity losses due to incapacity being included only on the cost side (174). In turn, productivity losses due to mortality are only considered in the outcome on the benefit side (to avoid double counting). Budget impact analysis (BIA) is mandatory and should include any one-off investments or start-up costs required in order to implement a new technology, with methodology and sources clearly outlined (129,174).

Economic evaluation is not standard practice in the evaluation but rather optional and can be initiated if no agreement is reached between sickness funds and the manufacturer on the price premium or if the manufacturer does not agree with the decision of the G-BA regarding premium pricing (added benefit); instead, BIA is mandatory (Advance-HTA, 2016). 'Cost-effectiveness' acts as one of the most important formal evaluation criteria in Sweden. Parameters having a socioeconomic impact, such as avoiding doctor visits or surgery, productivity impact, and, in general, savings on direct and indirect costs are also considered (167). Germany is the only country that does not apply any conditions of use in regards to specific sub-populations, in principle reimbursing drugs across the whole indication spectrum as listed on the marketing authorization (167).

Economic evaluations are performed within therapeutic areas and not across indications, thus an efficiency frontier approach of CBA using patient relevant outcomes is the preferred combination of analysis method-outcome measure (129,130,135,174,175). Since the introduction of the AMNOG, economic evaluations are supposed to be conducted for cases when price negotiations fail after the early benefit assessment and the arbitral verdict is challenged by the technology supplier or the statutory health insurer (174). However, no such analysis has been submitted so far and seems unlikely to ever happen because the CBA would have to be re-evaluated by IQWiG which would hardly bring any better results (167). The efficiency frontier approach is used to determine an acceptable "value for money", even though this is not involved in the process of the initial rebate negotiations.

The Netherlands

The Netherlands focuses on four priority principles when assessing medical technologies: (a) the "necessity" of a drug (severity / burden of disease) (145,176); (b) the "effectiveness" of a drug, according to the principles of Evidence-Based Medicine (EBM) (140,176); (c) the "cost-effectiveness" of a drug (158); and (d) "feasibility", that is how feasible and sustainable it is to include the intervention or care provision in the benefit package (177,178). The severity of the disease can be considered either implicitly or explicitly, more recently tending towards explicit burden of disease measures. The availability of treatments is considered by estimating the number of treatments perceived as necessary and comparing

these with the actual capacity in place, whereas the prevalence (e.g. rarity) of the disease is also considered.

Therapeutic value is the most critical criterion for reimbursement in the Netherlands as part of which patient preference data and user friendliness might also be considered (140), with surrogate and composite endpoints included in the analysis, in addition to disease-specific quality of life endpoints.

Although clinical novelty is a key innovation dimension considered, the ease of use and comfort might be used informally on an ad hoc case-by-case basis, whereas the nature of treatment or technology might only be implicitly considered. In terms of socioeconomic impact, explicit estimates might be produced to measure any public health benefit, whereas social productivity is also considered.

In the assessment process by ZIN, the cost-effectiveness criterion follows that of the therapeutic value and the cost consequence analysis. Cost-effectiveness is only considered for drugs with added therapeutic value, which are either part of a cluster and are reimbursed at most at the cluster reference price or are not reimbursed in the absence of possible clustering (140,179). The agency usually performs its own BIA, although voluntary submission from the manufacturer is also an option (140,153). The Netherlands also takes into consideration explicitly ethical criteria based on egalitarian principles, such as solidarity and affordability of the technology by individual patients (145,167,180). The preferred type of economic evaluation is CUA if the improvement in quality of life forms an important effect of the drug being assessed, or, if this is not the case, a CEA (134,181).

There is no formal threshold in place but there have been some attempts to define one. The €20,000 per life-year gained (LYG) threshold used in the 1990s to label patients with high cholesterol levels eligible for treatment with statins has been mentioned in discussions on rationing, but was never used as a formal threshold for cost-effectiveness. The same was the case with a threshold that the Council for Public Health and Health Care wanted to implement based on criteria such as the gross domestic product (GDP) per capita, in line WHO recommendations, which for the Netherlands would translate into €80,000/ QALY (179). The Council also suggested that the cost per QALY may be higher for very severe conditions (a tentative maximum of €80,000) than for mild conditions (where a threshold of €20,000 or less may be applied) (178), but none of the above was ever implemented. The positive outcome of an HTA results in the inclusion of the medical technology in the positive list (140), and if the cost-effectiveness analysis for a new innovative pharmaceutical is of good quality, reimbursement will principally not be denied on the basis of cost-effectiveness, despite potentially relatively high cost-per-QALY values (179).

A system of coverage with evidence development (CED) for high cost and orphan inpatient drugs has been used extensively between 2006 and 2011. Currently, financial-based agreements and performance-based risk sharing agreements are considered as well. So far, revisions seemed to be taking place systematically after four years for in-patient drugs and on an ad hoc basis for out-patient drugs (137,176), however more recent evidence suggests that in practice, the process is irregular with providers asking the Dutch healthcare authority for a revision of reimbursement.

HTA in Austria

As stipulated in Article 15a of the Federal Constitutional law on the financing and organisation of the health care system, evidence based medicine (EBM) and health technology assessment (HTA) should be employed to inform and support policies that ensure the quality of care in Austria. Following, a national strategy for the framework and implementation of HTA was introduced in 2010. Despite efforts to consolidate HTA in Austria and its use in specifying a list of reimbursable outpatient drugs, there is no systematic assessment of technologies or interventions to inform decision-making regarding the definition of a basic benefits package, nor a defined body to assess and appraise technologies. Rather, the system consists of a number of decentralised HTA units of varying importance that carry out specialised services.

Indeed, a key challenge in the Austrian setting stems from the division of competencies between the federal states, who take care of hospitals, and the social security institutions (SSIs) that focus on the outpatient sector. As such, regions are primarily focused on how to reduce hospital LOS and SSIs focus only on patients in outpatient settings, leading to a shift of burden (e.g. SSIs do not look at LOS, because they do not want to take over the costs). The two players only reflect on the economics of their own sector.

In what concerns the current state of HTA in Austria, due consideration needs to be given to different types of technologies, specifically, (a) surgical and diagnostic interventions, (b) out-patient pharmaceuticals and (c) in-patient pharmaceuticals. The distinction between these three types of interventions highlights the differences in the use of HTA as well as the competences by different health stakeholders in the Austrian health system. The processes for the above types of technologies are discussed briefly in turn.

With regards to surgical and diagnostic interventions, all new hospital interventions that are included in the hospital benefits catalogue (excluding drugs; including surgical and diagnostic high-risk interventions

such as pacemakers), are already being assessed. Hence, no intervention can be included in the catalogue, unless an evidence analysis has been undertaken.

With regards to out-patient pharmaceuticals, all out-patient pharmaceuticals that are to be included in the list of reimbursable pharmaceuticals (*Heilmittelverzeichnis*) need to undergo a health technology assessment. These are rapid assessment and, as such, manufacturers submit their dossiers for an evaluation to the Main Association of the Social Insurance Carriers (HVSV). Following an assessment of the evidence by the EWG department within the HVSV, a recommendation is issued to the Drug Evaluation Committee (*Heilmittel-Evaluierungs-Kommission (HEK)*). This committee, which constitutes the final appraisal body, consists of 20 members: 10 representatives from social insurance, 3 independent research experts, 2 representatives from the Austrian Federal Economic Chamber, 2 representatives from the Austrian Federal Chamber of Labour, 2 representatives from the Medical Chamber, and 1 representative from the Chamber of Pharmacists. The inclusion of pharmaceuticals in the reimbursement list is governed by §351g ASVG VO-EKO, which provides a transparent overview of the goals and procedures of the pharmacological, medico-therapeutic and health economic evaluations. The latter constitutes primarily cost-effectiveness analyses that do not encompass social costs. However, the final assessment and appraisal reports are not published, rendering the decision-making process non-transparent, and manufacturers have the right to appeal in court in the case of unfavourable decisions.

With regards to in-patient pharmaceuticals, the process is different from the one outlined above for out-patient pharmaceuticals. Each hospital company (i.e. public and private limited not-for-profit hospitals⁴⁶) within a federal state has a pharmaceutical commission (*Arzneimittelkommission*), which defines the list of drugs to be used at their respective hospital(s). Each hospital can either have their own list, or the hospital company can make the list binding for all its hospitals. The task of the pharmaceutical commission is to create and adapt the list for inpatient pharmaceuticals, as well as to develop guidelines for the procurement and use of pharmaceuticals. According to §19a (4) of the Federal Law for Hospitals and Rehabilitation Facilities (KAKuG), the development of these guidelines must take into consideration the appropriateness and cost-effectiveness of a pharmaceutical product. Specifically, of several therapeutically equivalent pharmaceuticals, one should choose the one that constitutes the greatest economic advantage (4.1). However, there is no explicit obligation to perform health technology assessments. As such, hospitals may or may not employ HTA as a tool to inform decision-making. For

⁴⁶ Vienna is the only region owning hospitals, which are therefore governed by the rules of Viennese administrative bodies.

instance, a recent survey has shown that merely 10% of the surveyed hospitals have reported the use of HTA (Czypionka et al., 2017). Hospital pharmaceuticals include costly interventions, such as oncology products; these are reviewed at a regional level and each hospital has its own list. Each region has a drug commission that creates the benefits catalogue for pharmaceuticals. As a result, treatments and pharmaceuticals differ across regions. Furthermore, there is no connection between the hospital decision-making and the 9 regional social security institutions, even though hospitals are largely financed (approx. 46%) by the social security institutions. Finally, different hospital companies and hospitals within a region may employ different HTA procedures and methods, leading to further cross- and intra-regional differences in access to inpatient drugs. Overall, and in what concerns hospital pharmaceuticals, HTA is not mandatory, assessments, where they take place are decentralized and there is no uniform and/or transparent evaluation process.

From an institutional standpoint, there are a number of (HTA) units of varying importance. Key among them is the Ludwig Boltzmann Institute (LBI), which is financed by research councils and 60% by the payers of the system: MoH (10%); Social Security Institutions (SSIs); and nine regional health funds that take care of hospitals. It conducts mostly single-technology assessments of high-tech medicines and some public health interventions. Medical devices review is also centralised through LBI. Assessments are not economic evaluations or cost-benefit analyses but only clinical benefit analyses (similar to France and Germany) and budget impact analyses. In this context, LBI assesses the benefits of new interventions to aid the benefits catalogue of hospitals for goods/services that require tariffs. Based on these assessments, LBI makes recommendations (primarily the assessment stage) and then political committees make the final decisions (i.e. appraisals). Final decisions are made publicly available. Other organisations that perform some type of HTA include Gesundheit Österreich (GÖG), Donau-Krems University (DUK), Private University for Medical Informatics and Technology (UMIT), and Medical University Graz (IAMEV) (see Figure 67 outlining the type of work they undertake).

Some institutions are very small and each has its individual specialisation (e.g. in methods) and ownership structure. Therefore, there is hardly any overlap in the work undertaken. However, there is no actual body in place to prevent duplications (e.g. in some cases GÖG performs quick assessments/rapid reviews and subsequently, the LBI institute is commissioned to perform an HTA on the same intervention, which constitutes an inefficient policy strategy). There is an informal network of Austrian HTA units, which meets once annually. The event is coordinated by the GÖG, however, the funding provided for coordination activities is limited.

Figure 67: Institutions performing HTAs in Austria

1	Hauptverband der österreichischen Sozialversicherungsträger (HVSV)
	<ul style="list-style-type: none"> • Conducts assessments of out-patient medicines as part of reimbursement decision-making
2	Ludwig Boltzmann Institut (LBI)
	<ul style="list-style-type: none"> • Conducts HTAs on public health interventions; high-tech medicine review (i.e. surgical and diagnostic high tech interventions) is also centralised through LBI
3	Gesundheit Österreich GmbH (GÖG)
	<ul style="list-style-type: none"> • Small unit for assessments for the Minister of Health; • Third party assessments for other countries, not Austria • Coordination function for HTA, but not implemented
4	Institute of Public Health, Medical Decision-making and Health Technology der Privaten Universität für Medizinische Informatik und Technik (UMIT)
	<ul style="list-style-type: none"> • Health economics and models • EU Horizon Scanning
5	Department für Evidenzbasierte Medizin und Klinische Epidemiologie der Donau-Krems Universität (DUK)
	<ul style="list-style-type: none"> • Evidence-based medicine
6	Institut für Allgemeinmedizin und evidenzbasierte Versorgungsforschung (IAMEV)
	<ul style="list-style-type: none"> • HTA on health services research in connection with general practice

In addition to the institutions outlined in the figure above, there are a number of other institutions that have the capacity to undertake evaluations. The table below provides an overview of all institutions with evaluation capacity in Austria, including the type and main source of financing.

Table 28: Institutional evaluation capacity in Austria

Institution	Main financing source	Type of financing	Focus
Austrian Public Health Institute (GÖG)	Ministry of health; Federal Health Agency	Project-based, funding defined on annual budgets	Impact Assessments, Evaluation Studies, (small) HTA reports

Institution	Main financing source	Type of financing	Focus
Austrian Public Health Institute (GÖG) – Sub-branch for planning and research	Länder and Social health insurance institutions (as third-party funders)	Project-based (third-party funding based on projects)	Evaluation studies, Impact Assessment
Ludwig-Boltzmann Institute for HTA	Ministry of health; Federal Health Agency, Social health insurance institutions	Project-based, funding defined on annual budgets	HTA reports
Division for EWG at the Main Association	Main Association of social security institutions	Project based, also funding other studies (e.g. framework arrangement with the IHS and Medical University Graz)	Various studies on Evidence and Economic Evaluations
Competence Centre for Health Promotion and Prevention	Main Association of social security institutions and Health insurance institution for railway workers and miners		Evaluation studies
IHS Health Economics and Health Policy	Various stakeholders; Research grants, EC-funding	Framework arrangement with the Main Association; other commissioned work, research grants	Health Services Research, Evaluation Studies
Medical university Graz (Institute for General	Main Association of social security	Basic funding from university, framework	Evaluation studies

Institution	Main financing source	Type of financing	Focus
Medicine and Evidence-based Health Research	institutions (as third-party funder); research grants	arrangement with the Main Association	
University of Linz (Chair in Health Economics)	Federal Government; Christian Doppler-society	Basic funding and research grants	Various studies in health economics
Medical University Vienna (Chair in Health Economics)	Federal government; EC, LBG	Basic funding and research grants	Economic evaluations and other quantitative studies
Danube-University Krems (Department for evidence-based Medicine and clinical epidemiology)	Land Lower Austria; Austrian stakeholders; EC	Basic funding; commissioned projects research grants	Evaluation studies, EBM reviews
Evaluation commission for pharmaceuticals (HEK)	Main Association of social security institutions	Basic funding and fees for applications	Positive list for the reimbursement of pharmaceuticals
Universities of Applied Science Upper Austria, Burgenland	Länder; other stakeholders	Basic funding, commissioned projects	Various projects in health services research

Good governance principles

Currently, there are no policy reforms on HTA. There are many decentralized decision-makers and there is no effort to create and finance a national HTA institute or an HTA board in order to establish a centralized research institute. Regional decision-makers also seem to prefer to make their own decisions and are against a centralized body. Although promoting efficiency in resource allocation appears difficult

in such a fragmented environment, a number of options exist to improve the coherence, transparency and functionality of the current system and, potentially, help the transition to an independent, arm's length system. These options are examined in turn.

What HTA system for Austria?

The current approach to HTA in Austria is fragmented and, often, non-transparent. Addressing fragmentation would require consolidation or better coordination. The existence of multiple units undertaking HTA is not necessarily a negative development and, most certainly, it is a feature of some insurance-based and/or decentralized health systems. Examples include Italy and Spain in this context. However, all these institutions undertaking HTA could be brought under a formal umbrella and either be consolidated into a hierarchical structure or coordinated more effectively. Addressing non-transparency would require that assessments and appraisals are conducted in a clear, transparent and inclusive manner, whilst ensuring that recommendations are well supported by good evidence and clear reasoning. Deviation from available guidance would require clear reasoning and arguments.

If consolidation and/or more effective coordination could in principle address the issues arising from fragmentation (and potential duplication) and non-transparency, the next question is how such consolidation and effective coordination should take place. A key international trend in this context is a clear preference for independent, arm's length HTA agencies that provide advice to decision-makers. One could, therefore, imagine a transition into an independent, arm's length HTA body that undertakes HTA for different types of technology (pharmaceuticals, medical devices, surgical procedures, etc) and provides advice to the relevant decision-makers concerned. It is clear from the Austrian setting that the decision-makers vary according to the type of technology or indeed the setting in which the technology is being made available. Such coordination/ central function exists already in the context of medical devices, where LBI is taking the lead. A comparable process may need to be generated for pharmaceuticals (both out- and in-patient) and other technologies if this does not exist.

It is not uncommon for the same HTA body to be accountable to or serve different decision-makers, as reflected by the structure of the health care system. In France, for example, HAS is providing advice to health insurers on whether a new product should be reimbursed and is also advising separately the Ministry of Health and the Economic Committee on the pricing strategy based on incremental benefit.

An important set of issues arises from a likely consolidation and coordination and relates to workload and topic selection. This is also related to the HTA process and whether this is going to be a rapid assessment or a full HTA. All these involve important trade-offs. A full HTA may be time consuming and it is certainly

an in-depth assessment of wider costs and benefits from introducing a new technology; it maybe in the interests of Austrian decision-makers to promote a full HTA for a subset of technologies, particularly those that have important resource implications. Formal evaluations should be introduced across costly technologies and a threshold for this purpose should be established. Clarity is therefore needed on topic selection and the choice between rapid assessment and full HTA. International evidence can provide detailed steer on the criteria that can be used for this purpose.

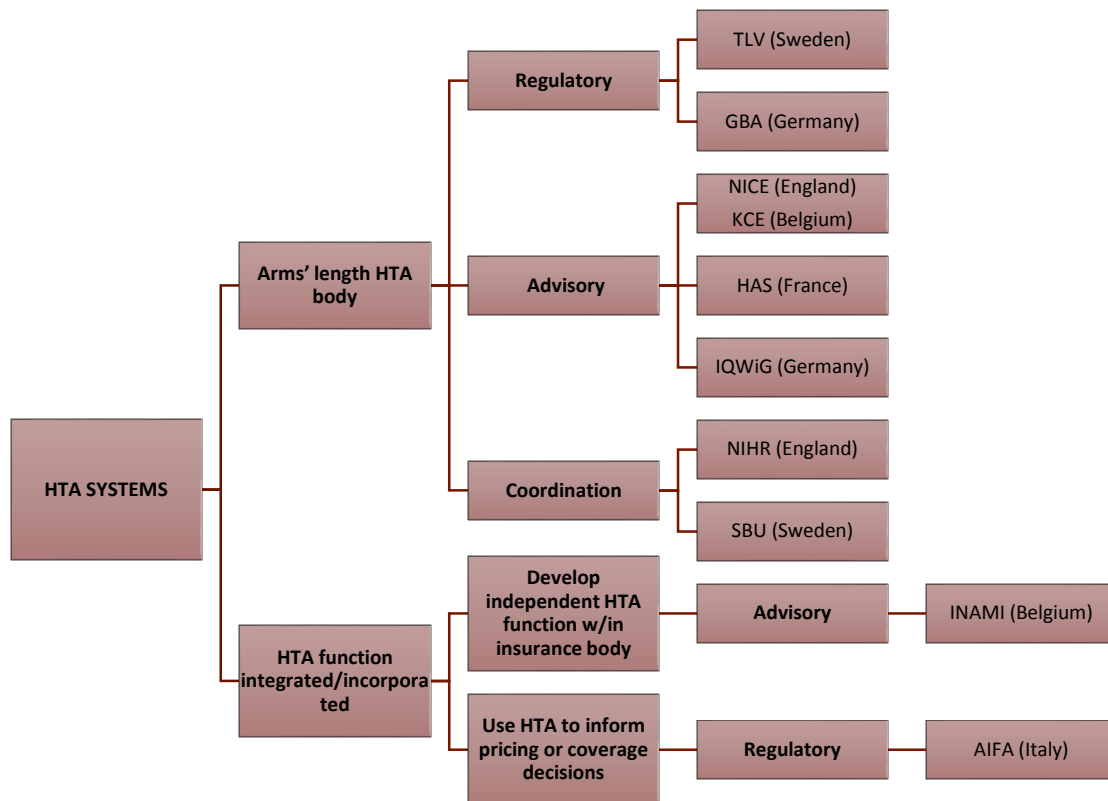
Clarity is also needed on a number of parameters regarding the conduct of HTA, such as type of evidence requirements and the types of evidence that can be admitted into assessment and appraisal; whether the HTA body will commission further evidence generation or conduct its own analysis, or whether it will rely on manufacturer submissions; guidance is needed on the comparators used in assessments; guidance is needed on the methods of assessment and the criteria – beyond costs and effects - that can be used as part of a deliberative process in the appraisal phase; the role of stakeholder involvement, particularly on issues such as scoping of assessments, consultation as part of HTA, review of draft reports, among others; the appeals process and the associated timelines; the timelines for assessment and re-assessment for rapid reviews, full HTAs and multiple HTAs (if applicable); and the monitoring and implementation of decisions.

Clarity is also required on the structure and composition of the relevant committee (Technology Appraisal Committee - TAC) that will review the evidence and make binding funding decisions. The TAC needs to reflect the stakeholder complexity in the context of each technology type, and the national-regional-local trade-offs that exist in different circumstances.

HTA in pharmaceuticals deserves particular mention since it is currently internalized and follows the integrated option in

Figure 68. If an independent, arm's length HTA body is not forthcoming, disclosure of out-patient drug assessments would make the current process more transparent. The introduction of an arm's length HTA body would enhance transparency of process, among other things, and would be a preferred option. In the case of in-patient pharmaceuticals, better coordination needs to take place across regions, including a transparent decision-making process. Again, the independent arm's length HTA body would be better placed to undertake this and coordinate across regions, stakeholders and evidence, although, arguably this may take some time to materialize and build consensus.

Figure 68: Types of HTA systems



Source: Kanavos, 2017.

5.2.5 Harmonisation of benefits in Austria

Differences in benefits

There are four different types of differences in benefits that need to be examined, namely legally defined differences in benefits, statute based differences, de facto differences, and differences in benefits due to contractual policies. The following section will focus on the legal and statute based differences in benefits.

Legally defined differences

Please refer to Volume 2 – Legal Analysis, specifically, sections 3.2.3 to 3.2.5.

Statute based differences

Each insurance fund in Austria specifies a statute (Satzung), which lists the services covered by a fund. Unless the template statute, which is defined by the Main Association of the Social Insurance Carriers, renders a service obligatory, the benefits for some categories of goods and services may differ across funds. These differences are captured in the latest report on the different statute regulations published by the Main Association and are present in the following areas:

- Medical aids
- Therapeutic appliances
- Dental care
 - Orthodontics
 - Dentures
- Sickness payment
- Special sickness payment for inpatient stays
- Public health measures (Tick-borne encephalitis vaccine)
- Cost subsidies in the case that contractual regulations are not present, more specifically lump sum payments for the reimbursement of medical costs
 - Non-medical psychotherapy
 - Ergotherapy
 - Medical home care
 - Physiotherapy
 - Logopedics
 - Freelance massage therapy
 - Medical and therapeutic aids
 - Paediatric nurses
 - Diagnosis through clinical psychologists
 - Other
- Travel (journey) costs
- Transportation costs.

The following section provides an overview of the statute-based differences in benefits across funds (please see Table 29), as well as further descriptions of the differences in benefits for goods or services with significant variations across carriers, including medical aids, therapeutic appliances, dental care, sickness pay, TBE-vaccination, travel (journey) costs, and other services such as psychotherapy,

physiotherapy, ergotherapy and logopedics. It must be noted that in line with §131b (1) ASVG, the allowance amount offered to the insured for using non-contracted services depends on the financial situation of the funds as well as the economic need of the insured, which explains some of the current differences in the size of benefits across funds.

Table 29: Statute-based differences in benefits across insurance funds

Good(s)/Service(s)	Differences in benefits in-kind/in-cash across the insurance funds
Medical aids	Allowances vary between the 3- and 8-fold amount of the maximum contribution base of 166 EUR, i.e. between 498 EUR and 1,328 EUR.
Therapeutic appliances	<p>Allowances vary between the 3- and 8-fold amount of the maximum contribution base of 166 EUR, i.e. between 498 EUR and 1,328 EUR.</p> <p>Allowances for therapeutic aids that are suited to replace functions of missing or deficient body parts, vary between 3- and 20-fold amount of the maximum contribution base, i.e. 498 EUR and 3,320 EUR.</p>
Dental care (orthodontics and dentures)	<p><u>Orthodontics</u>: Patient contribution ranges between 10% and 50% per year of treatment and repair - for contractually agreed tariffs. Funds may reimburse 50% to 100% per year of treatment and repair – for non-contractually agreed tariffs.</p> <p>Some funds, such as the VAEB, BVA, SVA and SVB may reimburse a fixed annual amount for specific treatments.</p> <p><u>Dentures</u>: Patient contributions for acrylic resin dentures, metal framework dentures, full metal crowns on clip teeth and veneered metal-ceramic crowns for partial dentures and their repairs range from 10% to 50% of the contractually agreed tariff rates.</p>
Sickness payment	The number of weeks covered is between 26 and 78 weeks. Generally carriers cover 52 weeks.
Special sickness payment for inpatient stays	Currently not provided by WGKK, KGKK, TGKK, BVA and BKK Zeltweg.
TBE-vaccine	Allowances range between 2 EUR and 19 EUR.

Good(s)/Service(s)	Differences in benefits in-kind/in-cash across the insurance funds
Travel (journey) costs	<p>Not covered by WGKK, NÖGKK, BGKK, KGKK, TGKK, BKK Wiener Verkehrsbetriebe.</p> <p>The coverage across the remaining carriers ranges between 0.07 and 0.10 EUR per kilometre for journeys without an accompanying persons and between 0.11 and 0.24 EUR per kilometre for journeys with an accompanying person. Some funds include additional criteria for reimbursement, such as specification of the type of service for which journey costs are covered.</p>
Transportation costs	<p>Not all carriers cover the transportation costs and among those that do, allowances may vary. The following carriers do not provide allowances: VGKK, VAEB, BKK Mondi, and BKK Zeltweg. A number of carriers do not provide allowances, except for in specific circumstances or cover a specific percentage of the tariff cost: NÖGKK, BVA and SVA.</p> <p>The remaining funds offer allowances per route equal to the amount of the prescription charge. However, some funds may specify conditions, or provide allowances that are twice as high as the prescription charge.</p>
Reimbursement of non-contracted services: Non-medical psychotherapy	<p>E.g. allowances range between 8.72 EUR and 15 EUR for 30 min sessions. There are additional differences in contingents of benefits in kind.</p>
Ergo therapy	<p>E.g. allowances range between 12.72 EUR and 29 EUR for 30-minute sessions. There are additional differences in contingents of benefits in kind.</p>
Physiotherapy	<p>Differences in the reimbursement of single vs. group sessions and in the type of therapies, in addition to differences in allowances. There are additional differences in contingents of benefits in kind.</p>
Logopedics	<p>Covered by BGKK, BKK Kapfenberg, BKK voestalpine Bahnsysteme, BKK Zeltweg, and SGKK.</p> <p>Allowances range between 14.53 EUR and 22.09 EUR for a 30-minute session.</p>

Good(s)/Service(s)	Differences in benefits in-kind/in-cash across the insurance funds
Medical home care	<p>Not covered by StGKK, TGKK, BKK voestalpine Bahnsysteme, BKK Zeltweg, BKK Kapfenberg.</p> <p>The allowances across the remaining carriers vary between 4.36 EUR and 8.72 EUR per visit.</p>
Freelance massage therapy	<p>All carriers, except for the SGKK, TGKK, VGKK and the SVA, have adopted the allowance amount for freelance massage therapy, as specified in the template statute. The remaining carriers have specified different allowances and/or may cover additional services, such as lymph drainage.</p>
Medical and therapeutic aids	<p>Not covered by SGKK, TGKK, VGKK.</p> <p>Some funds cover between 75% and 80% of the billing amount, deducting the patient contribution. Other carriers define benefits on a case-by-case basis or set the amount of the allowance equal to a comparable tariff service.</p>
Paediatric nurses	<p>Not covered by WGKK, NÖGKK, BGKK, OÖGKK SGKK, VAEB, SVA, SVB, BKK Wiener Verkehrsbetriebe.</p> <p>The coverage across the remaining insurance funds ranges between 4.36 EUR and 12 EUR during the day per case and day of care.</p>
Diagnosis through clinical psychologies	<p>Partial coverage of 14.53 EUR only available for VGKK and BKK Wiener Verkehrsbetriebe.</p>
Other	<p>In addition to the above listed types of services, there are several other services, for which some of the funds offer benefits. These services include, e.g. acupuncture, midwife consultations, sonography, and CT-guided nerve root infiltration.</p>

1. Medical aids

Medical aids are regulated through §137 ASVG and include, among others, glasses, contact lenses, orthopaedic arch support, trusses and wheelchairs. The coverage for this category of goods varies substantially between carriers, with differences in benefits being legally defined with reference to the statute. For instance, §137 (5) stipulates that insurance carriers cannot bear costs for medical aids that

exceed a ceiling amount defined in the carrier's statute. The statute can either define a uniform ceiling for all medical aids or different ceilings for specific types of medical aids, however, as stated in §108 (3), the ceiling may not exceed the 10-fold amount of the maximum contribution base (*HBG*) of 166 EUR, which amounts to 1,660.00 EUR and refers to the monthly demand.

In the case of allowances for medical aids, the template statute provides for a bandwidth that ranges between the 3- and 8-fold amount of the maximum contribution base of 166 EUR, i.e. between 498 EUR and 1,328 EUR. However, in the case of contact lenses the lower bandwidth may be decreased to e.g. the 1-fold amount of the maximum contribution base. This translates into some of the funds bearing costs that are three times the amount of the maximum contribution base, such as the WGKK, NÖGKK, StGKK, KGKK, and TGKK, while other funds, including ÖOGKK, SGKK, VGKK, VAEB, BVA, SVA and SVB cover the 8-fold amount of the maximum contribution base, amounting to a difference of up to 830 EUR per insured person (please see the table below for a detailed list).

Table 30: Differences in the coverage of costs of medical aids across insurance funds

Insurance carrier	Ceilings for the coverage of medical costs (based on the maximum contribution base (<i>HBG</i>) of 166 EUR)	Ceilings for appropriate repairs
WGKK NÖGKK StGKK KGKK TGKK BKK Kapfenberg	3-fold amount of the <i>HBG</i>	3-fold amount of the <i>HBG</i>
BKK Wiener Verkehrsbetriebe	4-fold amount of the <i>HBG</i>	4-fold amount of the <i>HBG</i>
BGKK	5-fold amount of the <i>HBG</i>	5-fold amount of the <i>HBG</i>
OÖGKK SGKK VGKK* VAEB BVA SVA SVB BKK Mondi BKK voestalpine Bahnsysteme BKK Zeltweg	8-fold amount of the <i>HBG</i>	8-fold amount of the <i>HBG</i> *5-fold amount of the <i>HBG</i>

In addition, it should be noted that the user charges differ between the fund for the self-employed (i.e. SVA), which is regulated through the GSVG, and all other funds. As such, the user charges for SVA-insured

persons amount to 20% of the medical aids costs (at least 20% of the maximum contribution base (HBG), i.e. 33.20 EUR; at least 60% of the maximum contribution base (HBG), i.e. 99.60 EUR for visual aids), while those of all other funds amount to 10% of the medical costs (at least 20% of the maximum contribution base (HBG), i.e. 33.20 EUR; at least 60% of the maximum contribution base (HBG), i.e. 99.60 EUR for visual aids).

2. Therapeutic appliances

As stipulated in §154 ASVG, allowances for therapeutic appliances in the case of mutilations, disfigurement and physical deficiency may be specified in the statute insofar as there is no claim from the statutory accident insurance or entitlement to benefits in kind as part of the medical rehabilitation measures. Both the federal states or the social insurance can be in charge of the coverage of therapeutic aids, and depending on the case, responsibility may be borne by the accident, pension or health insurance. Thus, the law does not provide for benefits in kind, except in the case of medical rehabilitation. In practice, however, there are in some cases contracts for benefits in kind that define tariff rates, although levels of patient contributions may vary across carriers.

Similarly to medical aids, the allowances for this category of goods vary substantially between carriers, with differences in benefits being legally defined with reference to the statute. The allowance comes to 90% (80% in the case of the SVA) of the medical costs, however, it cannot exceed the ceiling amount specified in the statute. Since 2016, this ceiling ranges between the 3- and 8-fold amount of the maximum contribution base of 166 EUR, i.e. between 498 EUR and 1,328 EUR. However, in the case of therapeutic aids that are suited to replace functions of missing or deficient body parts, the ceiling can vary substantially between funds, ranging between the 3- and 20-fold amount of the maximum contribution base of 166 EUR, i.e. between 498 EUR and 3,320 EUR. For instance, regional funds such as the WGKK and TGKK provide allowances of up to 498 EUR, while the NÖGKK, ÖOGKK and SGKK can provide benefits in cash of up to 3,320 EUR (please see the table below for a detailed list), amounting to a difference of up to 2,822 EUR between some funds

Table 31: Differences in the provision of allowances for general therapeutic appliances across insurance funds

Insurance carrier	Ceilings for the provision of allowances for general therapeutic aids (based on the maximum contribution base (HBG) of 166 EUR)
WGKK NÖGKK TGKK	3-fold amount of the HBG

Insurance carrier	Ceilings for the provision of allowances for general therapeutic aids (based on the maximum contribution base (HBG) of 166 EUR)
BKK Kapfenberg	
BKK Wiener Verkehrsbetriebe	4-fold amount of the HBG
StGKK	4.5-fold amount of the HBG
BGKK	
KGKK	5-fold amount of the HBG
OÖGKK	
SGKK	
TGKK	
VGKK	
VAEB	
BVA	8-fold amount of the HBG
SVA	
SVB	
BKK Mondi	
BKK voest Alpine Bahnsysteme	
BKK Zeltweg	

Table 32: Differences in the provision of allowances for specific therapeutic aids across insurance funds

Insurance carrier	Ceilings for the provision of allowances for therapeutic aids that are suited to replace functions of missing or deficient body parts (based on the maximum contribution base (HBG) of 166 EUR)
WGKK	
TGKK	3-fold amount of the HBG
BKK Kapfenberg	
StGKK	4.5-fold amount of the HBG
BGKK	5-fold amount of the HBG
KGKK	7-fold amount of the HBG
SVA	8-fold amount of the HBG
NÖGKK	
OÖGKK	
SGKK	
VGKK	
VAEB	20-fold amount of the HBG
BVA	
SVB	
BKK Wiener Verkehrsbetriebe	
BKK Mondi	

Insurance carrier	Ceilings for the provision of allowances for therapeutic aids that are suited to replace functions of missing or deficient body parts (based on the maximum contribution base (HBG) of 166 EUR)
BKK voestalpine Bahnsysteme BKK Zeltweg	

3. Dental care

The statutes pertaining to dental care are for the most part harmonised across funds and there is a nationwide uniform contract and fee schedule for conservative surgical services. In addition, since 2015 all children and adolescents until the age of 18, who suffer from severe tooth displacements (=IOTN-4 and IOTN-5), are eligible for free dental braces, regardless of their fund affiliation. However, in the case of orthodontics for adults or dentures there may be significant differences in patient contributions or allowances across funds, as specified in the statutes. For instance, patient contributions for orthodontic services for insured persons over the age of 18 may range between 10% and 50% of the contractual tariff rate. In case of treatments without contractually agreed tariffs, insurance funds may reimburse 50% to 100% of the treatment or repair costs. In addition, some funds, such as the VAEB, BVA, SVA and SVB may reimburse a fixed annual amount for specific treatments. Please see the table below for further reference.

Table 33: Differences in patient contributions for orthodontic treatments (excluding repairs) with contractually agreed tariffs across insurance funds

Insurance carrier	Patient contributions as a percentage of the contractually agreed tariff rate per treatment year
WGKK	
NÖGKK	
BGKK	
OÖGKK	
StGKK	
KGKK	
SGKK	50%
TGKK	
SVA	
SVB (IOTN < 4)	
BKK Wiener Verkehrsbetriebe	
BKK Kapfenberg	
BKK Zeltweg	35%
VAEB	30%
VGKK*	*(max. 30%)

BKK Mondi	25%
BKK voestalpine Bahnsysteme	25%
SVB (IOTN > 4)	20%
BVA	10%

When it comes to dentures, similar differences across funds prevail. For example, patient contributions for acrylic resin dentures, metal framework dentures, full metal crowns on clip teeth and veneered metal-ceramic crowns for partial dentures and their repairs range from 10% to 50% of the contractually agreed tariff rates. Table 34 provides an overview of the differences across carriers for acrylic resin dentures as an example.

Table 34: Differences in patient contributions for acrylic resin dentures (excluding repairs) with contractually agreed tariffs across insurance funds

Insurance carrier	Patient contributions as a percentage of the contractually agreed tariff rate per treatment year
WGKK	
NÖGKK	
KGKK	
TGKK	50%
BKK Wiener Verkehrsbetriebe	
BKK Kapfenberg	
StGKK	40%
BKK Zeltweg	35%
VAEB	30%
BGKK	
OÖGKK	
SGKK	25%
VGKK*	*(max. 25%)
SVB	
BKK Mondi	
BKK voestalpine Bahnsysteme	
SVA	20%
BVA	10%

4. Sickness payment

In the event of illness-related incapacity to work, all insurance carriers, except for the SVA, provide sickness benefits for up to 52 weeks. In addition, the ÖOGKK, VAEB, BKK Mondi, BKK voestalpine Bahnsysteme and BKK Zeltweg allow for the possibility to extend sickness pay from 52 to 78 weeks, while the BVA offers to pay a maximum of 78 weeks of sickness benefit to all of its insured persons. In contrast,

the SVA offers a support benefit starting on the 43rd day of work absence and which is paid for a maximum of 20 weeks. This benefit amounts to 29.46 EUR per day. In addition to this support benefit, the SVA may cover up to 26 weeks of sick pay in the case of voluntary supplementary insurance. Insured persons pay a 2.5% contribution rate and can make use of the benefit once the individual has been four days absent from work. The extension of sickness benefit from 52 weeks to a maximum of 78 weeks can be achieved through a change in the statute (please see Table 35 for an overview of the differences across carriers).

Table 35: Differences in the coverage of sickness payment across insurance carriers

Insurance carrier	Maximum duration of the provision of sickness payment
SVA (*Only with supplementary insurance)	26 weeks
WGKK NÖGKK BGKK StGKK KGKK SGKK TGKK VGKK BKK Wiener Verkehrsbetriebe BKK Kapfenberg	52 weeks
OÖGKK VAEB BKK Mondi BKK voest Alpine Bahnsysteme BKK Zeltweg	52 (-78) weeks
BVA	78 weeks

5. Special sickness payment for inpatient stays

In the case of necessary, inevitable inpatient stays⁴⁷ at hospitals, as well as rehabilitation centres as part of the follow-up treatment, ten of the health insurance carriers pay special sickness benefits, while five do not provide the benefit (please refer to the table below for an overview).

⁴⁷ The entitlement to special sickness benefits for inpatient stays is subject to further regulations. Please refer to §30 of the insurance fund statutes.

Table 36: Differences in the coverage of special sickness payment for inpatient stays across insurance carriers

Insurance carrier	Benefit provided for in the statute
NÖGKK	Yes
BGKK	
OÖGKK	
StGKK	
SGKK	
VGKK	
VAEB	
BKK Mondi	
BKK voest Alpine Bahnsysteme	
BKK Kapfenberg	
WGKK	No
KGKK	
TGKK	
BVA ⁴⁸	
BKK Zeltweg ⁴⁹	

6. Public health measures: TBE-vaccine

Health insurance funds provide allowances for the insured and their dependents for the costs of tick-borne encephalitis (TBE-) vaccine, which may range between 2 EUR and 3.70 EUR across regional funds, between 3.70 EUR and 16 EUR for national funds and between 2 EUR and 19 EUR across all insurance carriers (please see the table below for an overview of the different allowances across funds).

Table 37: Differences in the allowances of TBE-vaccination across insurance carriers

Insurance carrier	Allowance in EUR for the TBE-vaccination
WGKK	2.00 EUR
NÖGKK	3.63 EUR
OÖGKK	
TGKK	
VGKK	
BKK Wiener Verkehrsbetriebe	
BGKK	3.70 EUR
StGKK	
KGKK	
SGKK	
SVA	

⁴⁸ Implementation of special sickness pay is not appropriate.

⁴⁹ Implementation of special sickness pay is planned.

Insurance carrier	Allowance in EUR for the TBE-vaccination
BKK Kapfenberg	7.30 EUR
VAEB	10.00 EUR
BKK voest Alpine Bahnsysteme	12.50 EUR
BKK Zeltweg	15.00 EUR
BVA	16.00 EUR
SVB*	(*max. 80% of the actual costs)
BKK Mondl	19.00 EUR

7. Travel (journey) costs

A number of regional funds do not cover travel journey costs (please see Table 10 for a detailed overview). With the exception of SVB and BKK Zeltweg, the remaining funds offer reimbursement at 0.09 EUR per kilometre for journeys without an accompanying person and 0.14 EUR per kilometre for journeys with accompanying persons. The SVB offers 0.10 EUR per kilometre, however, this is only applicable to journeys for preventive check-ups and public health measures for ill health prevention. Furthermore, the SVB does not pay benefits in the case of journeys with an accompanying person

Table 38: Differences in the coverage of travel (journey) costs across carriers

Insurance carrier	Allowance in EUR per kilometre for journeys without an accompanying person	Allowance in EUR per kilometre for journeys with an accompanying person
WGKK	No	No
NÖGKK		
BGKK		
KGKK		
TGKK		
BKK Wiener Verkehrsbetriebe		
SVA	0.07 EUR	0.11 EUR
OÖGKK		
StGKK		
VGKK	0.09 EUR	0.14 EUR
VAEB	*(max. of 0.09 EUR)	*(max. of 0.14 EUR)
BVA*		
BKK voest Alpine Bahnsysteme		
BKK Kapfenberg		
BKK Zeltweg		
SVB (*only for preventive check-ups and public health measures for ill health prevention; does not pay benefits in the case of journeys with an accompanying person.)	0.10 EUR	0.15 EUR

8. Psychotherapy, physiotherapy, ergotherapy and logopedics

The statute outlines differences in benefits for psychotherapy, physiotherapy, ergotherapy and logopedics provided by non-contracted health professionals. As such differences can be found in the reimbursement of single vs. group sessions and in the type of therapies, and allowances. For instance, allowances for ergotherapy range between 12.72 EUR and 29 EUR for 30-minute sessions, and between 8.72 EUR and 15 EUR for 30-minute psychotherapy sessions (excluding psychologists). Allowances for logopedics treatments at non-contracted health professionals are currently provided by BGKK, SGKK, BKK Kapfenberg and BKK voestalpine Bahnsysteme only. However, it must be noted that allowances for non-contracted health professionals may correspond to the level of benefits-in-kind provided by the respective carriers, which depend on the number of health professionals they have contracts with. Therefore, a high allowance for non-contracted professionals may also imply lower benefits-in-kind. Hence, there are additional differences in contingents of benefits in kind, which are not captured in the statutes and which need to be examined, in order to harmonise benefits for these services.

Cost of harmonising benefits across funds

Methodology

The scope and level of per capita expenditures for the use of statute-defined benefits vary across funds and types of services. However, these differences in expenditure do not necessarily reflect cross-carrier differences in benefits, as there are number of additional factors that can influence the former, including the risk structure of the insured population, variations in tariffs, differences in entitlement to benefits, authorisation regimes, service form and quantity. As such, a higher per capita expenditure does not necessarily imply better benefits for the insured, and individual-based data may constitute a more sophisticated basis for an analysis of differences in risk structures and benefits across carriers. However, due to data limitations, this study proceeds with a comparison based on cross-carrier variations in per capita expenditures.

The following section highlights differences in the per capita expenditures across carriers for medical aids, therapeutic devices and dentures, using data from the official income statements of carriers for the year 2015 that are provided by the Main Association of the Social Insurance Carriers. Data for psychotherapy, physiotherapy and logopedics was obtained from the HVSVs *Einzelnachweisung ärztlicher Hilfe* for the year 2015 and the average per capita expenditures include both contracted and non-contracted health

professionals. In order to estimate the initial costs of harmonisation for specific goods or services, unadjusted and risk-adjusted calculations were performed.

For the unadjusted calculations, we present the range and average of per capita expenditures for benefits-in-kind and in cash across funds. Following, we introduce a number of different expenditure floors and increase the per capita expenditure (PCE) of those funds, where expenditure levels are below the newly defined floor. However, if a fund's per capita expenditure is greater than that of the newly introduced floor, then the fund's expenditure levels are not lowered. These artificial per capita expenditures of a fund are then multiplied with the number of insured persons in order to obtain an estimate of the total expenditure of a carrier for a good or service when levels of benefits are raised.

Two different floors were employed for this exercise: (1) the average expenditure across all funds and (2) 70% of the highest per capita expenditure within a category of goods or services. At last, the total floor-based expenditures are aggregated across funds and compared to the present overall expenditures for specific goods or services. The difference between those two overall expenditures constitutes a basic bandwidth estimation of the cost of increasing benefit levels, which would resemble a partial or complete harmonisation of services across funds, depending on the type of artificial floor used for the calculation (please see Table 39 for results).

However, a number of limitations prevail. For instance, it must be noted that the income statement includes data on dental treatment and dentures, however, does not specify the costs of orthodontic care. Therefore, the present calculations only refer to the cost of harmonising dentures across funds. Furthermore, the cost of harmonising allowances for transportation costs were not included due to significant regional and geographical differences in proximity to health care facilities, which may undermine actual differences in per capita expenditures. In addition, recent policy developments have taken into consideration the differences in benefits for transportation costs and include the aim to harmonise patient contributions for transportations pertaining to specific treatments, including chemotherapy, radiotherapy, dialysis and emergency transport, among others.

Similarly, the costs of harmonising sickness pay were excluded, as not only the social insurance entitlements, but also the labour law entitlements vary across carriers. Hence, merely extending the duration for which insured are entitled to social insurance sickness pay would not take into account variations in labour law entitlements, which may explain differences in the duration of sick pay entitlements. In addition, some funds offer to pay allowances for a longer time period due to the low number of insured patients applying for the benefit. Last, it must be emphasised that the cost bandwidths

are based on unadjusted calculations that do not take into account any of the previously mentioned influencing factors, such as risk structures and variations in tariffs. Thus, the higher expenditure floors may over- or underestimate actual costs and are not necessarily synonymous to efficient levels of expenditure.

Therefore, where possible, a sensitivity analysis is performed in which per capita expenditures of funds are risk-adjusted for age and gender. First, the total expenditures for specific goods or services are calculated for each risk group within the respective carriers. As this information is not available in the income statements, the distribution of total expenditures across age and gender groups for medical aids and therapeutic appliances is derived from the LIVE dataset, which enables the calculation of age- and gender-adjusted per capita expenditures. The LIVE database is a product that collects information on the costs of the health insurance benefits used by the insured, who receive a yearly statement on the former. The data encompasses all carriers except for the SVA and VAEB, who run separate systems to collect data in order to inform their members about the annual use of benefits. Following, the risk-adjusted per capita expenditures are raised to one of the two artificial floors, as previously described.

However, there are limitations to this sensitivity analysis. For once, it is noteworthy that total expenditures for the same category of goods or services differ between these two datasets. For example, the income statement reports a total expenditure of 729,111,510 Mio for dental care and dentures, while 702,601,048 Mio are reported in LIVE. On the other hand, the total expenditure for medical aids and therapeutic appliances is with 494,808,415 Mio significantly higher in LIVE compared to the 191,691,415 Mio reported in the income statement, despite not even including data for the SVA and VAEB. Therefore, the LIVE distribution of expenditures across age and gender may not reflect the actual distribution corresponding to the income statement. Furthermore, LIVE data on distributions of use across risk groups are only available for medical aids and therapeutic, as the remaining categories do not apply to the previously identified statute-based differences. Last, the per capita distributions across risk groups for dental care combine both dental care and dentures in LIVE. Given that the focus lies on dentures only and that the per capita distribution for dental care is most likely to differ significantly from that of dentures, no risk-adjustment is performed.

In addition, there are a number of other population risks that may exacerbate variations in per capita expenditures and which ought to be adjusted for, such as income levels and employment status. Furthermore, there are several additional factors that should be accounted for besides the risk structure of the insured population, in order to approximate the actual costs of harmonising benefits. Therefore, a

risk-adjustment that accounts for the effects of age and gender on per capita expenditures may somewhat improve cost estimations of harmonising benefits, however, it is not sufficient to approximate actual costs.

Results

As presented in Table 39, the per capita expenditures for medical aids and therapeutic appliances, dentures, psychotherapy, physiotherapy and logopedics vary significantly between funds. However, as previously emphasised, the differences may be due to several factors that cannot be accounted for in the present calculations, such as risk structure of the insured population, variations in tariffs, differences in entitlement to benefits, authorisation regimes, service form and quantity, and therefore should be considered with caution.

Following the introduction of two artificial expenditure floors, an unadjusted cost of harmonising benefits across specific goods and services was calculated (please refer to Table 40 and Table 41 for the cost of harmonising benefits). The initial calculations, which do not account for a number of significant influencing factors, may provide an initial guidance to approximate costs of a partial harmonisation, however, the results may deviate to a significant extent from the actual costs, unless further adjustments are made. Based on the initial calculations, raising the per capita expenditure (PCE) of those regional funds whose PCE lies below the average PCE-level of all funds, would come at a cost of EUR 148.653.819 Mio, while raising the PCE of all carriers to the average PCE is estimated to cost EUR 171.075.130.

In comparison, increasing per capita expenditures to a level that equals 70% of the currently highest PCE could come at a cost that is approximately 2.2 times higher than the cost of introducing the artificial floor 1. For instance, raising the PCEs of funds that currently have an expenditure level below floor 2 is estimated at a cost of EUR 327.763.167 Mio and EUR 390.117.440 Mio, when harmonising across regional funds and across all funds respectively (please see Table 42).

Furthermore, when taking into account the age and gender risk-structures of the funds (except for SVA and VAEB, as data is not included in LIVE) for medical aids and therapeutic appliances, the estimated costs of harmonising benefits deviate from the unadjusted calculations, ranging between an additional EUR 3.9 and 6.6 Mio. Cost may further deviate if calculations are adjusted for additional risks, such as income, and for the remaining goods and services other than medical aids and therapeutic appliances. Please see Table 40 and Table 41 for an overview of the cost of a partial harmonisation.

Overall, the present total expenditure for the described goods and services is estimated to increase between 0.194% (floor 1) and 0.428% (floor 2) if benefits are harmonised across regional funds only, and between 0.223% (floor 1) and 0.509% (floor 2) if goods and services are expanded across all health insurance carriers. However, as previously mentioned, these values need to be cautiously examined due to the presence of other influencing factors that could not be accounted for. Please see Table 43 and Table 44 for a detailed overview of the total expenditures across different floors post harmonising benefits.

Table 39: Per capita expenditures for different goods and services

Type of good/service	Medical aids and therapeutic appliances	Dental care (Dentures only)	Psychotherapy	Physiotherapy	Logopedics
Range of the per capita expenditure across all funds	16.3 – 54.4	20.8 – 60.3	1.2 – 11.3	6.9 – 44.5	0.5 – 3.3
Average per capita expenditure across all funds	30.4	33.2	4.3	20.6	1.9
Average per capita expenditure across regional insurance funds	26.6	25.8	6.1	16.2	1.8

Table 40: Estimated costs of harmonising benefits for specific goods and services across regional funds

Type of good/service	Medical and therapeutic aids	Dental care (Dentures only)	Other health care services (psychotherapy, physiotherapy, logopedics)
Floor 1: average PCE across all funds	€32.582.895	€51.750.530	€64.320.393
<i>Risk-adjusted (age and gender)</i>	€38.496.056		
Floor 2: 70% of the highest PCE across all funds	€79.855.873	€114.931.717	€132.975.577
<i>Risk-adjusted (age and gender)</i>	€86.412.726		

Table 41: Estimated costs of harmonising benefits for specific goods and services across all insurance funds

Type of good/service	Medical and therapeutic aids	Dental care (Dentures only)	Other health care services (psychotherapy, physiotherapy, logopedics)
Floor 1: average PCE across all funds	€39.190.971	€58.520.453	€73.363.706
<i>Risk-adjusted (age and gender)</i>	€45.104.132		
Floor 2: 70% of the highest PCE across all funds	€98.316.345	€130.888.706	€160.972.388
<i>Risk-adjusted (age and gender)</i>	€102.229.448		

Table 42: Estimated costs of harmonising a number of specific benefits across insurance carriers

	Total cost of harmonising benefits across regional funds in EUR	Total cost of harmonising benefits across all funds in EUR
Floor 1: average PCE across all funds	€148.653.819	€171.075.130
<i>Risk-adjusted (age and gender)</i>	€154.566.980	€176.988.291
Floor 2: 70% of the highest PCE across all funds	€327.763.167	€390.177.440
<i>Risk-adjusted (age and gender)</i>	€334.320.020	€394.090.543
Current expenditure for the specified benefits	€765.736.932	

Table 43: Total expenditure and change in expenditure after a harmonisation of specific benefits across regional funds only

	Total expenditure for the specified benefits post-harmonisation	Percentage change in expenditure of SHI
Floor 1: average PCE across regional funds	€914.390.742	↑19.4%
<i>Risk-adjusted (age and gender)</i>	€920.303.903	↑20.1%
Floor 2: 70% of the highest PCE across all funds	€1.093.500.090	↑42.8%
	€1.100.056.943	↑43.6%

Total expenditure for the specified benefits post-harmonisation	Percentage change in expenditure of SHI
<i>Risk-adjusted (age and gender)</i>	

Table 44: Total expenditure and change in expenditure after a harmonisation of specific benefits across all funds

Total expenditure for the specified benefits post-harmonisation	Percentage change in expenditure of SHI
Floor 1: average PCE across regional funds	€936.812.053 ↑22.3%
<i>Risk-adjusted (age and gender)</i>	€942.725.214 ↑23.1%
Floor 2: 70% of the highest PCE across all funds	€1.155.914.363 ↑50.9%
<i>Risk-adjusted (age and gender)</i>	€1.159.827.466 ↑51.4%

5.2.6 Policy options: Harmonising benefits

The aim of a harmonisation of benefits is to provide equal access to a comprehensive set of qualitative (state of the art) goods and services to all insured persons, irrespective of their association with an insurance fund. This refers in particular to the regional funds, for which contribution rates are already harmonised, as well as the care system of the federal and regional public servants and company funds. In consideration of the differences in benefits that are perceived and criticised by the insured community, a decree was issued by the Trägerkonferenz in October 2016, followed by a set-up of a working group to address the present variations in benefits across health insurance carriers. The working group has identified 23 goods and services that are to be harmonised in a gradual manner, of which the following eleven goods and services are to be addressed in the first phase: TBE-vaccine, PSA test, transportation

costs (i.e. patient contributions), endovaginal sonography, wheelchairs, absorbent incontinence products (e.g. diapers and pads), blood glucose test strip, FreeStyle Libre, orthodontic services, sickness pay (i.e. family allowances) and special sickness pay for inpatient stays.

Furthermore, a report was published as part of the Trägerkonferenz on 13 June, in which carriers have agreed to expand the provision of benefits for psychotherapeutic services by one-fourth. The aim is to extend provision of care from 65,000 patients in 2015 to more than 78,000 patients in 2019 and to grant access to multi-professional health care facilities for an additional 3,500 children and adolescents. Although each carrier specifies their own targets for psychotherapeutic services, the recent developments provide a good example of cross-carrier coordination efforts to define and aspire towards a common goal of extending and to some extent harmonising the provision of benefits to the insured.

These developments are central to improving access to and provision of goods and services, and ought to be gradually expanded across other areas, where differences persist. This chapter has described a number of such areas, including legally and statute based differences in benefits across funds that are identifiable and of relevance to the insured. For instance, significant variations exist in the coverage of costs of medical aids and therapeutic appliances, patient contributions and allowances for dentures and orthodontics, the maximum duration for which sickness pay is granted and allowances for other services such as psychotherapy, physiotherapy, ergotherapy, and logopedics.

In addition to identifying areas for harmonisation, the financial impact on insurance carriers needs to be assessed as well. This study has attempted to provide initial cost estimations by introducing a number of expenditure floors to raise and concurrently harmonise the level of benefits in form of per capita expenditures across funds, by increasing the expenditure levels of those funds that are e.g. below the average per capita expenditures. Although the estimated costs need to be considered with caution, as there are a number of influencing factors that could not be accounted for due to data limitations (e.g. variations in tariff rates), the estimated cost bandwidths may provide initial insights into the possible financial impact on insurance carriers and may guide the prioritisation of categories of goods and services that are to be harmonised in the initial stages. In addition, it is highly suggested to take into consideration and perform additional studies that account for influencing factors, such as tariff rates, population risk-factors and volume, in order to further assess and determine actual differences in benefits and to approximate the true costs of a harmonisation.

Furthermore, a unified collection of high-quality data that is comparable across funds is of central importance to supporting the harmonisation of benefits. Although there have been significant

developments in recent years to improve the quality of data, a number of limitations prevail that may undermine cross-carrier comparability. For once, billing periods, which can be monthly or quarterly, differ across funds and consequently produce incomparable data. Moreover, the relatively large number of multiple insured obscures expenditure ratios. Therefore, further efforts are required to ensure uniform data storage and structure. One example would be to extend the LIVE database to the SVA and VAEB, in order to collect comprehensive and comparable information on expenditures across risk classes, such as age and gender.

The harmonisation of benefits across areas of concern to the insured is an important step forward and one that needs to be gradually continued. However, in the longer-term evidence-based mechanisms, such as health technology assessments, should be employed and fostered to define benefits packages, in order to inform reimbursement and coverage decisions that promote and extend the provision of (cost-) effective, safe and qualitative goods and services, while simultaneously ensuring the financial sustainability of the health care system.

In addition to harmonising benefits, there are other areas that need to be considered and addressed as part of the aim to improve equity and access to care. For instance, these include structural inequalities due to current contracting policies and the availability of resources.

Legal considerations

Most of the distinctions between the different branches of the Austrian health care system with respect to services and benefits in kind could be harmonised by legal acts passed by the national Parliament (even without a 2/3-majority). This would be possible as long as there is no intensive and/or sudden reduction compared with the entitlement as it was before, which would be a violation of the constitutional principle of 'Vertrauensschutz'.

Legal interventions aiming to harmonisation of benefits could be a problem, too, as far as existing general contracts (e.g. those with the Chambers of Physicians) are concerned. Such interventions can be justified under constitutional law, however, by 'public interest', (which could be assumed basically with respect to harmonisation measures) as long as the respective intervention is appropriate.

From a legal point of view the easiest way of harmonisation could be pursued by the different health insurance carriers themselves by coordinating their respective 'Satzungen' which would be possible with regards to all services and benefits that are not strictly determined by legislation.

The same applies to the ‘Mustersatzung’ released by the ‘Hauptverband’, which is authorised to declare certain (but – at present – not all) provisions of that Mustersatzung as binding. Harmonisation measures could be pursued most of all by widening the scope of those binding provisions as laid down in the Mustersatzung by covering all health insurance carriers which is subject, though, to unanimity in the ‘Trägerkonferenz’, and thus, requiring the consent of all carriers.

Harmonisation with respect to the ‘Krankenfürsorgeanstalten’ is much more difficult as they are based on regional law which is under the competencies of the Regional Parliaments (‘Landtage’). So covering the KFAs, too, would require an amendment to the Federal Constitution or at least coordinated legal acts passed by each Landtag.

(For details see Volume 2 chapter 3.3.).

Summary of policy options: Harmonisation of benefits

With the aim to initiate a process of harmonisation of benefits in Austria, recent developments have focused on a select choice of 23 goods and services that are to be adjusted across insurance carriers in the coming future. Building on these developments, this study has provided an initial estimation of costs for three broad categories of goods or services, which differ in the scope and level of per capita expenditures across insurance funds. However, a main driver of these cross-carrier variations constitutes the difference in tariffs. Therefore, further studies need to be conducted that account for this influencing factor.

While this study provides initial cost calculations, the harmonisation of benefits is a political decision to be taken by the government and stakeholders. Even though a harmonisation of benefits is central to ensuring equity, it is noteworthy that Austria has one of the lowest levels of unmet need in Europe, as identified in an international analysis of trends in Chapter 3 of this report. Although some European countries have more comprehensive and uniform benefits packages, they have experienced higher levels of unmet medical need than in Austria. This is because there are a number of other important factors to equity, including access to care and the level of user charges, which are not considered major challenges within the Austrian environment.

There are a number of financing options in the case of a political decision to harmonise benefits. (1) Partial funding could ensue through a risk-adjustment scheme, or enhanced risk-adjustment scheme, as outlined in the options in section 4.2.7 (2) Alternatively, or in addition, government funds could be directed to

insurance carriers that offer a slightly less comprehensive benefits package compared to other funds. (3) Further funds could be directed to the project by improving efficiency in the system. For instance, a reduction in hospitalisations could lead to significant savings. However, significant investments in outpatient and primary care are required in the first instance to maintain high-quality care, whilst simultaneously reducing hospital admissions, meaning that savings to be used for a harmonisation could be generated in the mid- to long-term. (4) In addition, better coordination and consolidation could also lead to efficiency gains, which could be directed in the form of savings to increase coverage of benefits in Austria.

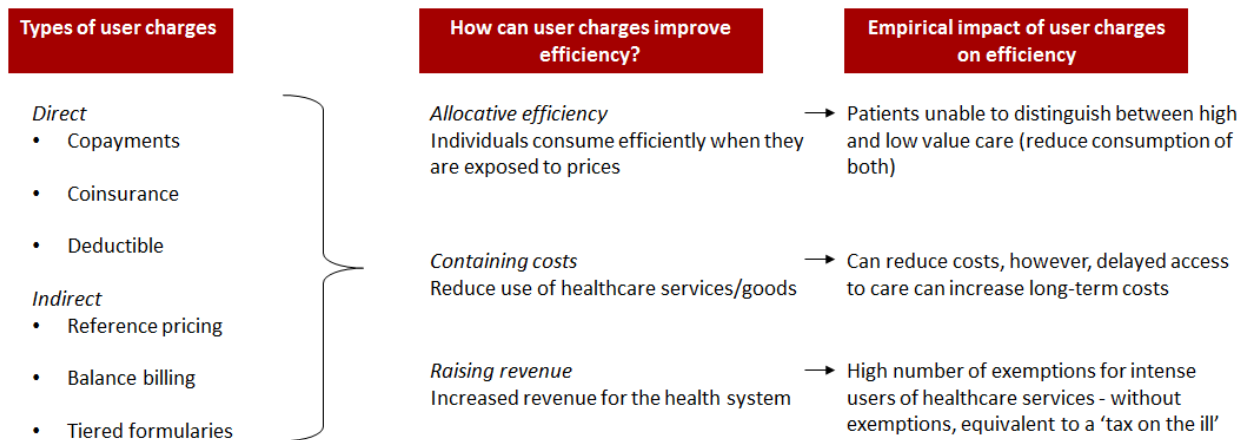
5.3 User charges

Cost-sharing, theoretically, can improve healthcare efficiency through three main channels (see Figure 69). First, by exposing the patient to price, a rational individual will only consume care that is of high-value and cost-effective. As outlined within Gemmill *et al.* (2008), any reduction in consumption of healthcare as a result of user charges is seen to contribute to allocative efficiency, irrespective of the impact on vulnerable groups and health outcomes (182). Second, a reduction in healthcare consumption due to user charges assists in containing expenditure. Third, user charges can raise revenue if they are set at a rate that does not significantly deter utilisation. This last argument is more relevant in low-income countries where public funds may not be sufficient to supply adequate levels of healthcare. In such settings, injections from private resources can improve overall health, given vulnerable groups are exempt (182).

Despite the above three arguments, there is increasing empirical evidence⁵⁰ to suggest user charges may have the opposite effect. In regard to improvements in allocative efficiency, research has shown that patients do not have the knowledge to distinguish between high- and low-value care, leading to a reduction in both necessary and unnecessary care. By delaying or forgoing necessary care, patient outcomes are likely to worsen, therefore leading to greater long-term healthcare costs. Lastly, the ability of user charges to raise revenue is limited by exemption policies, which are needed to protect vulnerable groups (e.g. elderly and/or chronically ill). Specifically, since vulnerable groups consume a disproportionately greater amount of healthcare services, user charges are unlikely to significantly impact revenue. Without exemptions, user charges would effectively act as a 'tax on the ill' (182).

⁵⁰ Evidence and aligning references included in the remainder of the report.

Figure 69: Efficiency argument for user charges



Source: Adapted from (182)

As outlined above, there is limited evidence on the positive impact user charges have on efficiency. Instead of abandoning cost-sharing, policy-makers have instead begun to link user-charges with incentives to encourage a reduction in low-value care only (i.e. value-based user charges) (183). Given the patient's lack of medical knowledge, this translates into taking the decision of what is considered high-value care away from patients and to external experts. A number of countries across Europe and the US currently employ various forms of value-based user charges, which are most common within the outpatient drug market (183).

The remainder of this section explores the types of user charges, case studies in the European context, the impact of user charges, value-based user charges, and concludes with an overview of policy options.

5.3.1 Types of user charges and incentives

User charges can be applied to patients directly, which requires a financial payment for certain health care goods or services, or indirectly through top up payments if only a fixed rate for a drug or service are reimbursed (see Table 45 and 46 below). Commonly used direct and indirect user charges have been outlined in the tables below, including associated patient incentives.

Table 45: Direct user charges and associated incentives

Type of user charge	Definition	Incentive
Co-payments	Paying a fixed fee of the medical good or service.	Patient may reduce volume of services. Regarding drugs, patients may reduce the number of prescriptions, while simultaneously increase the size of the prescription. No incentive to switch to cheaper products unless co-payment differs.
Co-insurance	Paying a fixed proportion of the cost of the medical good or service.	Patient may reduce volume of services, and there is an incentive to switch to a cheaper product.
Deductible	When an insured person is liable to pay up to a certain threshold of costs, before the insurance takes on a certain amount or proportion of the costs.	When close to the deductible, there is an incentive to increase consumption of services to reach threshold. When not close, patients have an incentive to reduce consumption and/or switch to a cheaper product.

Source: (182)

Table 46: Indirect user charges and associated incentives

Type of user charge	Definition	Incentive
Reference pricing (mostly for prescription drugs)	Users have to pay the difference of the drug price relative to the maximum the payer is willing to pay for a particular group of similar drugs.	Patient less likely to consume a product that is above the reference price. Incentive to switch to a cheaper, generic product.
Extra / balance billing	Users have to pay the difference between the amount the payer is willing to reimburse and the price charged by the provider.	Patient has an incentive to consume products/services that the health insurance will reimburse in full.
Multi-tiered formularies (prescription drugs)	Typically involve 2-3 layers which are associated with different co-payment levels (e.g. first tier usually generics with low co-payment).	Incentive for the patient to switch to generic products.

Source: (182)

5.3.2 User charges in European Social Health Insurance Systems

The share of OOP spending within total health expenditure (THE) differs significantly across countries with SHIs in Europe. Swiss citizens currently pay the greatest proportion of OOP, followed by Belgium and Austria. France and the Netherlands, have relatively low OOP expenses, at 6.4% and 5.2% of THE, respectively (184). In France, this is due to the high proportion of the population covered by private health insurance to cover additional expenses, while in the Netherlands, the figure excludes the annual €385 deductible.

Table 47: Out of pocket spending of total health expenditure (%) (2014)

Country	OOP as a % of THE
Switzerland	26.8
Belgium	17.8
Austria	16.1
Germany	13.2
Luxembourg	10.6
France	6.4
Netherlands*	5.2
OECD	13.6
High-income	13.3

Source: (184). Note: *Excludes the €385 deductible.

In all European countries with SHI systems, cost-sharing is applied to acute inpatient care and pharmaceutical sector. At the outpatient level, cost-sharing is employed in all countries except Austria and Germany. Deductibles are less common with only the Netherlands and Switzerland enforcing such a mechanism (185,186).

Table 48: User charges in European social health insurance systems

Country	General deductible	Acute inpatient care	Outpatient primary care	Outpatient specialists	Pharmaceuticals
Austria	×	✓	Depends on insurer	Depends on insurer	✓
Belgium	×	✓	✓	✓	✓

Country	General deductible	Acute inpatient care	Outpatient primary care	Outpatient specialists	Pharmaceuticals
France	×	✓	✓	✓	✓
Germany	×	✓	×	×	✓
Luxembourg	×	✓	✓	✓	✓
Netherlands	✓	✓	×	✓	✓
Switzerland	✓	✓	✓	✓	✓

Source: (185,186)

Most European SHI systems, have protection mechanisms in place to protect patients from catastrophic health care expenditures for individuals of low income and the chronically ill; these come in the form of complete exemptions, reduced user charges, a ceiling of total income spent on user charges, or absolute ceilings.

Table 49: Protection mechanisms within cost sharing systems

	Total OOP	Inpatient acute care	Outpatient care	Pharmaceutical (sum or % of income)
Austria*	Exemptions vary: minimum pension, children, servants and “people requiring social protection”*	Maximum days pa, exempt: “people requiring social protection”	Exempt from e-card fee: children, pensioners and “people requiring social protection”	Cap (2% of net income) Exempt: Low-income and vulnerable groups (e.g. people with infectious diseases)
Belgium	Out-of-pocket cap by income level		OMNIO: “preferential reimbursement” if income below threshold: Reduced copayments	OMNIO: “preferential reimbursement” if income is below threshold: higher reimbursement for low income

	Total OOP	Inpatient acute care	Outpatient care	Pharmaceutical (sum or % of income)
France	Exempt: chronic, disabled, pregnant**	Exempt: chronic, disabled, pregnant and low income	Deductibles capped to €50pa	Deductibles capped to €50pa
Germany	Total cap by % of income (2%) (lower for those with chronic conditions)	Maximum days pa		Total cap by (%)
Luxembourg		Maximum days pa		Exempt: drugs for chronic diseases
Netherlands	Low income receive financial support to pay user charges and premiums, i.e. "Health care allowance". Children (up to 18) do not bear any co-pays. Excludes GP consultations.			
Switzerland	Total cap (absolute sum)	Not included in cap, Exempt: children, students and maternal care	Included in general cap	Included in general cap

Source: (4)

Note: *Austria: exemptions differ by health insurances (e.g. e-card fee only relevant for GKKs). **France: low income indirectly exempt through free complementary VHI.

5.3.3 International case studies

France

Outpatient: €1 as well as between 30% to 70% of costs, depending if they are registered with a physician or specialists or not, and if they are referred to a specialist or not

Inpatient: €18 a day, and €13.50 for patients who require psychiatric facilities (if the procedure is not costly, then a 20% co-insurance rate applies, as opposed to a €18 a day fee)

Pharmaceuticals: €0.50 per drug box, in addition to a subgroup specific cost-sharing rate

France's health expenditure not covered by SHI is covered either by voluntary health insurance or by patients (187). What makes France stand out is its voluntary health insurance system which covers user charges (while contracts differ, on average they voluntary health insurance covers around 50% of charges) (187). Thus the existence of voluntary health insurance explains the relatively low OOP spending at just 6.2% of THE in 2014 (the lowest of all OECD countries) (184).

In France, cost-sharing is required for all four categories: acute inpatient care, primary care, outpatient specialists, and outpatient prescription drugs (185), as well as any type of care not included in the SHI positive list (187).⁵¹ Co-payments are required in acute patient care in terms of payments per day as well as a catering fee. Specifically, patients are required to pay €18 a day, this figure falls to €13.50 for patients who require psychiatric facilities (185).

In primary care, a copayment of €1 is required, as well as 30% of costs if individuals are registered with a physician and 70% if they are not (185).⁵² Specifically, patients who are registered with the GP are required to pay 30% of €25 (i.e. €7.50) plus an additional €1 (185).

For utilisation of outpatient specialist care, patients also pay €1 as well as 30% of costs or 70% of costs, depending if they were referred to see the specialists or not (higher co-insurance rate for those who are not referred) (185). Certain specialist areas do not require referrals, so cost sharing is always 30% for gynecologists, ophthalmologists, psychiatrists and neuropsychiatrists (185).

Outpatient prescription drugs are subject to a copayment of €0.50 per drug box, in addition to a subgroup specific cost-sharing rate (185). This is determined by the *Service Médical Rendu* (SMR), a rating determined by the severity of the pathology of the medication's primary indication and by the efficacy and tolerance of the drug (0%, 35, 70%, 85%) (lower copayment for necessary, more serious treatments) (185,187). The €0.50 or €1 payments are, despite their traditional meaning, sometimes referred to as deductibles- they are the value that is subtracted from the amount that the patient would otherwise be reimbursed (187).

Extra-billing is also prominent among specialist doctors, and to a lesser extent, GPs in private practices. At present, approximately 50% of specialists and 8% of GPs have the right to bill over the official tariff rate.

There are various protection/exemption mechanisms in place. For example, as the system is based on direct payments, that is paying now and being reimbursed later, there are exemptions in place for low income families (beneficiaries of CMU-C, ACS and AME insurance) and particularly expensive care, such that the patient is not required to pay in advance of being reimbursed (187). Such immediate third party

⁵¹ Positive lists outline drugs that are reimbursed. Any products not in the positive list, must be paid in full by the patient.

⁵² In France, since 2004 (Medecin Traitant), patients are required to sign with a physician, either a specialist or GP (depends on the patient's preference). The vast majority (approx. 99%) register with a GP.

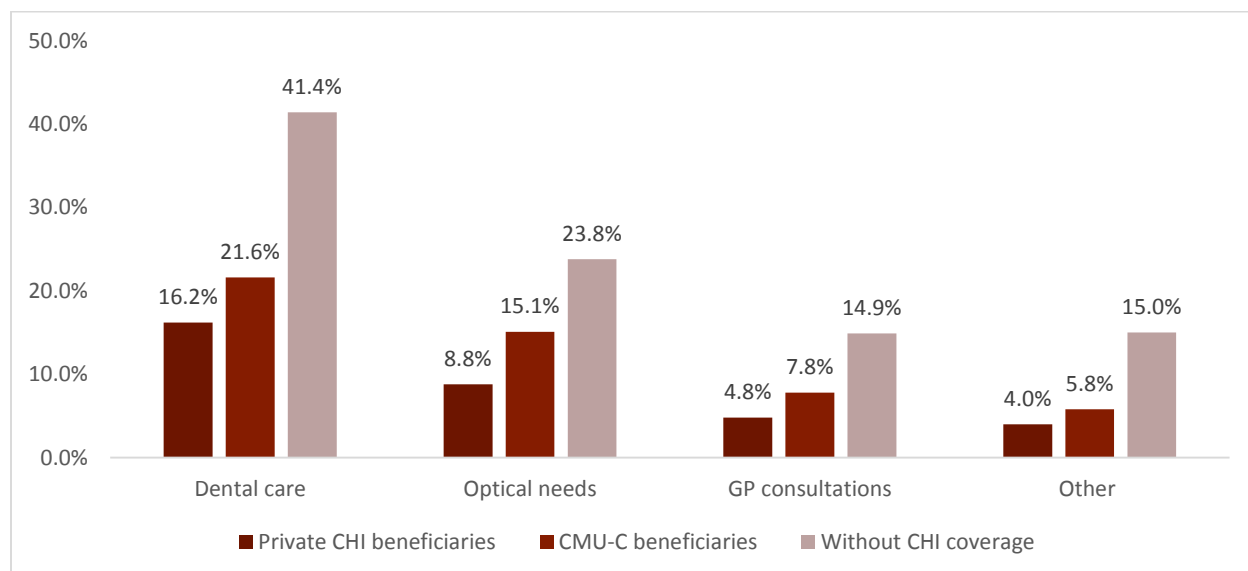
payments have recently been extended (2016) to include long-term/chronic patients as well as pregnancies, with plans to include all SHI recipients by November 2017 (187).

Subgroups of individuals, as well as other particular circumstances are exempt from co-insurance. Specifically, chronically ill individuals, some specific treatments (e.g. abortions/fertility treatments), occupational injuries, pregnant women, contraceptives until 18 years of age, organ donations and disabled dependents (187). In total, there are 30 groups of diseases which are exempt and which make up two-thirds of public expenditure on health.

While low income individuals are not exempt from all co-insurance, they are eligible for free public complementary health insurance to cover all such costs (187). Low income individuals (i.e. CMU-C and AME beneficiaries) are however exempt from inpatient cost-sharing (187). Lastly, for all individuals, the additional €1 or €0.50 payments for outpatient services and prescription charges are capped to a total of €50 per annum (187). At the inpatient level, there is a maximum co-insurance rate of 20%, however, this is not applicable for diagnostic or surgical procedures whose costs exceeds €120.

Despite the above exemption policies, unmet need due to financial barriers exists. For example, a 2012 study found that, on average, 18% of National Health Insurance beneficiaries, aged at least 18 years, reported unmet need in regard to dental care. This figure fell to 10% for optical care needs, 5% for medical consultations and 4% for other types of care (188).

Figure 70: Unmet care needs due to financial barriers by complementary health insurance coverage (2012)



Source: (188)

Germany

Outpatient: Up until 2012, flat rate quarterly payment for accessing primary care (Praxisgebuehr) (abolished)

Inpatient: €10 per day, capped at 28 days per year

Pharmaceuticals: 10% copayment of the pharmacy's sale price of a drug

Co-payments, as well as corresponding exemption mechanisms are central to the German health care system. At 13.2%, Germany's proportion of OOP spending within THE is close to the average of OECD or high-income countries (184), with the highest share coming from pharmaceutical payments (189). The 1989 *Health Care Reform Act* advocated cost-sharing to raise revenue, make patients liable for part of the costs, and encourage appropriate use of health care by lowering co-payments to reward positive behavior (e.g. preventative healthcare) (189). In order to reach the *Statutory Health Insurance Modernization Law* (2004) savings expectations, OOP requirements increased (189). Among these policies, was the introduction of standardised copayments for acute inpatient care, as well as the quarterly payments for first physician contact at the primary level, the *Praxisgebuehr*,⁵³ the latter was abolished in 2012 (189). The reason for the abolishment was the combination of a limited reduction in health care utilisation and high administrative costs, which resulted in insignificant cost savings (190–192) (see Table 50 below).

Table 50: Germany's *Praxisgebuehr* (primary care co-payment) (abolished)

Germany's <i>Praxisgebuehr</i>	
Type of user charge	Co-payment.
Amount	€10 for the first visit to an outpatient physician (GP or specialists) or dentist's office within a three-month period.
Exemption	Those aged under 18 years. Also exempt for preventative medical services (e.g. health check-ups, cancer screenings).
Duration	2004-2012.

⁵³ Under the policy, all adults within the statutory sickness funds had to pay 10 euros at their first physician visit within each three-month period. Vaccinations and preventative services are exempt.

Germany's Praxisgebuehr

Impact Limited impact on access to physicians after first year (see Table 54 for details).

Source: (193)

The German health care system has co-payments for acute health care as well as outpatient prescription drugs (185). In inpatient acute care, patients are required to pay a €10 fee per day (185). This is however capped at a total of 28 days a year (185). Regarding pharmaceutical expenditure, patients pay a 10% copayment of the pharmacy's sale price of a drug (185). There is however also a reference pricing system in place,⁵⁴ so when a patient insists on a more expensive originator drug, they must pay the difference between the originator and cheaper generic product (189).

Germany has always placed a strong emphasis on its protection mechanisms. These exemptions however do not apply for reference pricing differentials that patients are required to pay (189). Protection mechanisms in Germany come in the form of a total OOP cap of annual household income. Spending is capped to a maximum of 2% of household income for healthy individuals, and at 1% for chronically ill (189). Chronically ill is defined by either requiring long-term care, being severely disabled or providing a certificate from a doctor about the importance of continuous treatment (189). Furthermore, individuals with 'extraordinary spending' which is defined on a case-by-cases bases may be eligible to apply for an exemption from income tax (189).

Netherlands

Outpatient: €385 annual deductible, which applies to specialist outpatient care (not GP consultations), *inpatient care and pharmaceuticals.*

Further user charges subject to each individual's health insurance plan.

The proportion of OOP spending within THE in the Netherlands is the lowest of the European SHI systems at 5.2% (184). Since 2014, there has been an increase in the OOP spending mainly due to an increase in the mandatory deductible (194).

⁵⁴ There exists internal and external referencing price. The former uses the prices of drugs already on the national market with similar therapeutic effects to determine the cost of the new drug, while the latter looks at the cost of the same drug in other countries to determine price.

In the Netherlands, there is limited cost-sharing beyond the compulsory deductible, which is set at €385 per annum and applies to all individuals 18 years and above (194). The logic behind the deductible is to reduce moral hazard, which it seems to be doing as approximately only half the population reach the full amount of the deductible (194). This deductible applies to the use of most health care services including outpatient prescription drugs and diagnostics, but does not include GP consultations, maternity care, home nursing and integrated care in primary care settings (diabetes, chronic obstructive pulmonary disease, asthma, cardiovascular risk management), as well as care for children (194). Patients are thus not liable to pay any user charges for outpatient GP care, while outpatient specialist care, outpatient prescription drugs, as well as inpatient care are subject to deductible payments (194).

The amount of cost-sharing beyond the deductible depends on individual's health plan (194). Patients also have the choice of an additional 'voluntary deductible', the value of which they can choose themselves (between €100-€500 per year), which acts to lower their premiums (the reduction of the yearly premium is approximately 50% of the voluntary deductible amount) (194). The voluntary deductible is applied across the same care sectors as the compulsory deductible, however, only a small although growing proportion of patients opt for this option (i.e. approximately 12% of the insured population, of which 69% choose the maximum deductible amount) (194).

In-kind policies may limit reimbursement to contracted providers, while restitution policies offer free choice of provider, however, compensation for services is only made up to an amount set by the insurer (194). The majority of individuals choose an in-kind policy, while only a small minority chose a selective policy, which covers less contracted providers than a normal in-kind policy (194). Thus cost-sharing would occur if patients covered by in-kind policies choose providers which are not contracted by their insurer. Although, under Dutch law there exists freedom of choice which means that such co-payments might not form a material barrier to visit a provider of choice.

The Netherlands has also implemented certain value-based user charges schemes (explained in further detail in the next section of this chapter). For example health insurers have the option of offering a scheme where deductibles are not charged if preferred medicines are used, preventive health programs for certain diseases are followed, or contracted providers are chosen (194). Furthermore, there is a reference pricing system in place, in the sense that after the general deductible is reached, there is no cost-sharing for outpatient prescription drugs, except for the price differential between generic drugs and chosen branded drugs (185,194).

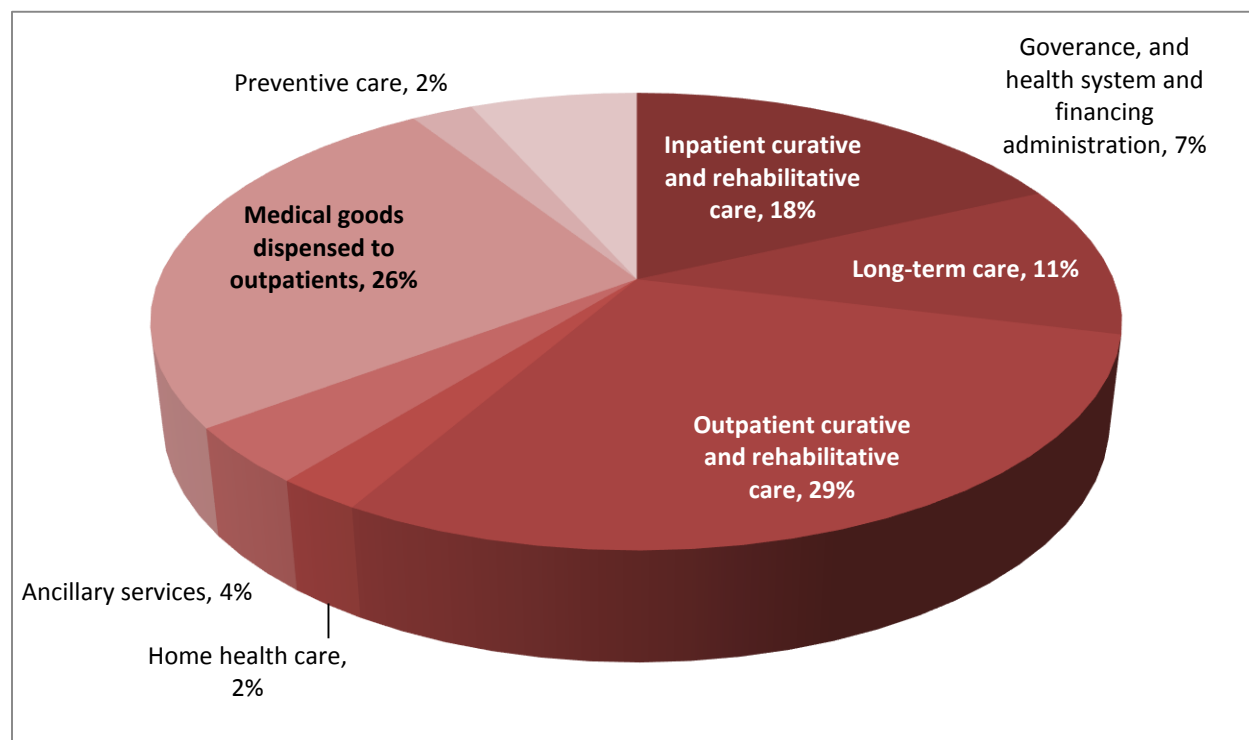
There are no exemptions to the deductible or contributing to SHI premiums (194). Low income individuals receive a 'Health Care Allowance' which is based on the average premium by insurers and the compulsory deductible (194). This is paid in advance of every month and surplus finances or deficits are balanced out on an individual level (194). Chronically ill and disabled individuals are not exempt from user charges either (194). However, low income beneficiaries were fully compensated for the substantial increase of the deductible in 2013 in their healthcare allowances. Also municipalities, are allowed to and often do, offer group plans to people on welfare that bear lower user charges (due to pre-payment of the deductible).

5.3.4 User charger policies in Austria

Out-of-pocket payments in the Austrian healthcare system

As of 2015, Austrian citizens spent €8.57 billion on voluntary health care payments (€2.28 billion) and household OOP payments (€6.29 billion). For voluntary healthcare payments, patients typically spend their funds on inpatient curative and rehabilitative care (i.e. 48%), followed by governance and health system financing administration (25%). For household OOP payments, the largest item of expenditure relates to outpatient curative and rehabilitative care (37%), with inpatient care accounting for just 7% of overall expenditure. When combining voluntary healthcare and household OOP payments, 29% of all private expenditure is targeted at outpatient, rehabilitative care, followed by medical goods at the outpatient level (26%), and inpatient care (18%) (see Figure 71).

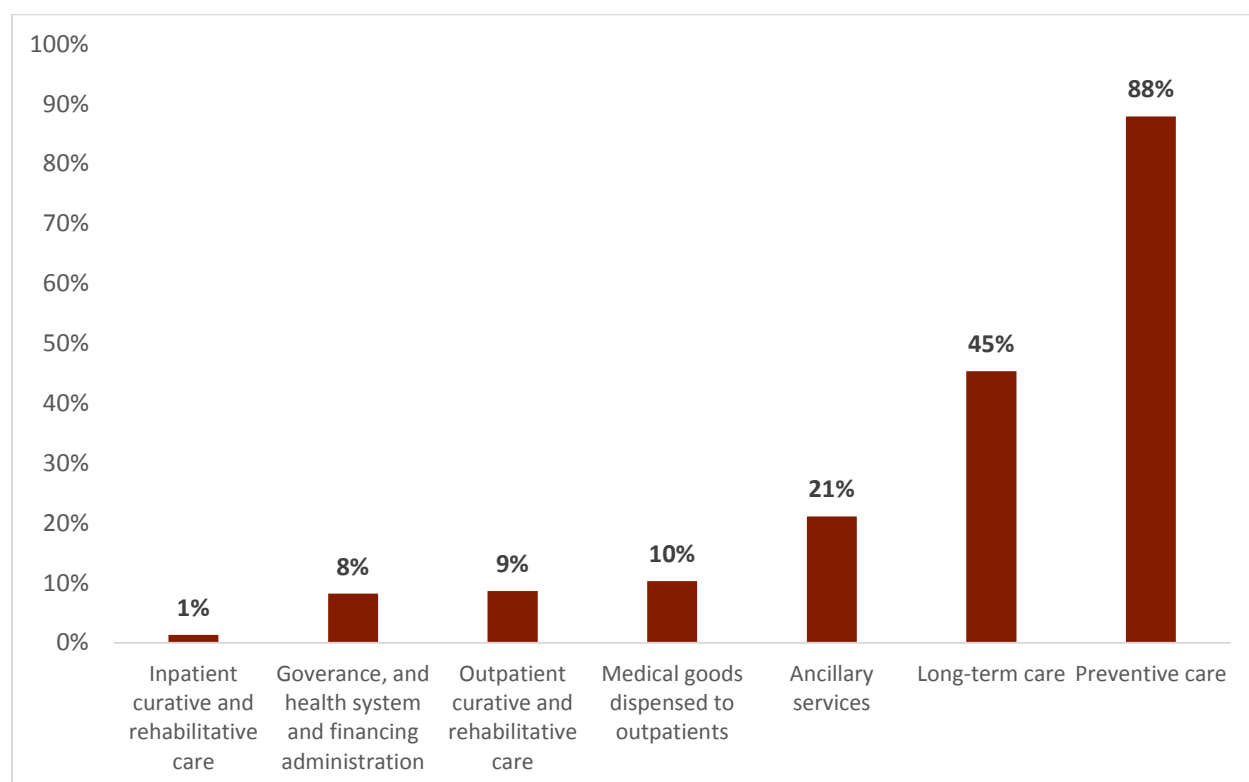
Figure 71: Share of voluntary household expenditure and household OOP by type of care (Austria, 2015)



Source: Statistics Austria (System of Health Accounts)

In terms of trends, between 2004 and 2013, private healthcare expenditure per capita (constant prices) have been increasing across all levels of care. In particular, preventative care and long-term care rose by 88% and 45%, respectively. Inpatient care, on the other hand, grew by just 1% over the specific period (see Figure 72).

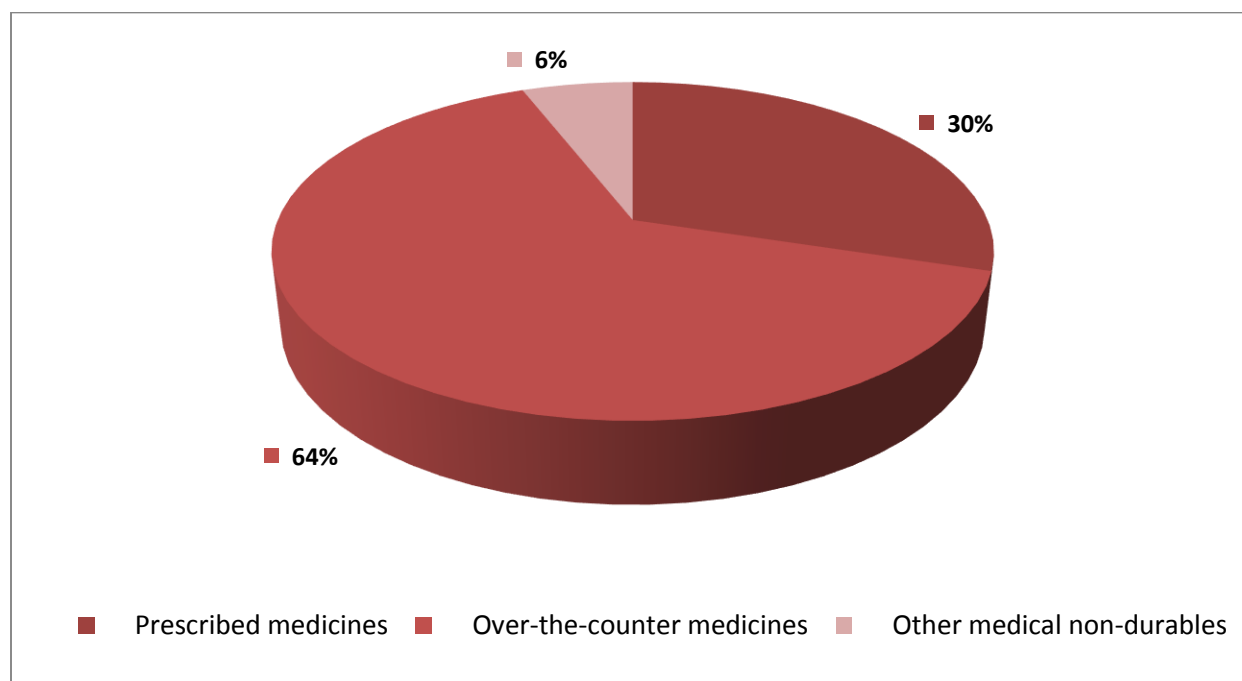
Figure 72: Percentage change in per capita private expenditure between 2004 and 2013



Source: Statistics Austria (System of Health Accounts)

In terms of pharmaceuticals, the majority (64%) of private expenditure is spent on over-the-counter medicines. The remaining 36% of private expenditure was spent on prescribed medicines (30%) and other medical non-durables (6%) (see the figure below). The relatively low proportion of private expenditure on prescribed medicines is due to the high level of subsidisation via government schemes and social health insurance (i.e. 88% of total prescribed medicine expenditure).

Figure 73: Share of private pharmaceutical expenditure (2015)



Source: Statistics Austria (System of Health Accounts)

User charges in social health insurance

Outpatient: Depends on the insurer (varying rates of co-insurance across health insurers)

Inpatient: Co-payment between €12-20 per day (capped at 28 days), with rates varying across regions and insurance status

Pharmaceuticals: flat rate payment of €5.85 per packet of drugs (with an expenditure cap at 2% of the individual's net income)

An overview of user charge arrangements across all social security institutions in Austria is provided in Table 52. Social insurance carriers all offer different user charges, with the exception of copayments for pharmaceutical products. Specifically, all insurance carriers charge a flat rate payment of €5.85 per packet of drugs. If the cost is below €5.85, then the patient must pay the full amount (e.g. if the cost is €4.00, the patient must pay €4.00). To protect vulnerable groups, there exist prescription fee exemptions. Latest data show that 517,601 people received permanent exemption status.⁵⁵

⁵⁵ Information provided directly from the Ministry of Labour, Social Affairs and Consumer Protection.

Table 51: Exemption policies for pharmaceutical prescription fee

Group	Description	Law
General exemptions	<ul style="list-style-type: none"> Contagious disease Young men in civilian service and immediate relative Asylum seekers 	
Exemptions for social reasons (automatic)	<ul style="list-style-type: none"> Those on low pensions All insured when REGO has been reached 	Decree by the HVSV according to §31(5)16
Exemptions for social reasons (require application process)	<ul style="list-style-type: none"> Those under a certain income threshold 	

Source: (68)

In a positive move, a cap on pharmaceutical expenditure was introduced at 2% of an individuals' net income (excluding inpatient drug expenditure). Previously, those who are financially vulnerable and/or those with chronic conditions were not protected against high drug expenditure. In 2015, 400,506 people reached this threshold.⁵⁶

For outpatient services, regional insurance carriers (GKKs) charge an €11 service fee for the e-card each year. In regard to healthcare services, patients who seek medical care from non-contracted doctors will only be reimbursed 80% of the cost charged by contracted doctors, and thus pay the remaining 20% OOP (plus an additional cost if the non-contracted doctor charges more than the contracted fee). A co-payment for medical aids is also required of GKK insurees. Lastly, relative to wealthier funds, GKKs offer less benefits, which increases the level of indirect OOP for their insured populations.

Other insurance carriers, with the exception of the SVB, employ a co-insurance rate between 14-20% on all outpatient services. The SVB, on the other hand, charge a flat-rate payment of €9.61 per quarter *if* the patient accesses medical care.

⁵⁶ Ibid.

In addition to the traditional user charges outlined above, the SVA and VAEB have experimented with value-based user charges. Specifically, the SVA reduces the co-insurance amount from 20% to 10% if the patient achieves preventative healthcare goals agreed with by their doctor (e.g. weight, physical exercise), while the VAEB repays €1 per medication package if a patient switches to a cheaper generic product (see figure below for further details).

Figure 74: Value based user charges within Austria's social insurance system

The SVA has introduced a 'Be Healthy on Your Own' program which aims to encourage people to take better care of their health. To achieve this, the SVA will reduce the co-insurance rate for medical and dental care from 20% to 10% if the patient makes improvement in one of the following five areas: weight, physical exercise, tobacco consumption, alcohol consumption, and blood pressure. Exemptions are rewarded for all areas, except alcohol and tobacco consumption (e.g. pregnant women).

The co-insurance rate is also reduced for those with Type 2 Diabetes who engage in the Diabetes Disease Management Program (Therapie Aktiv).

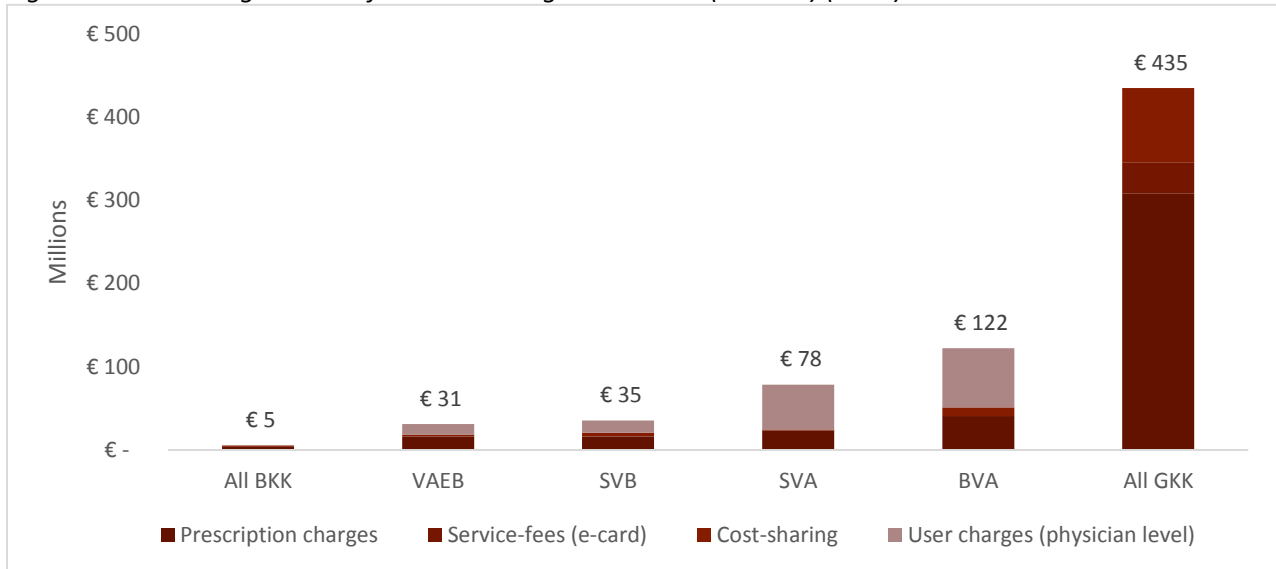
Data on participation from 2012 (latest available) revealed low participation rates across all income groups. Specifically, participation in preventative check-ups (which are required to receive the co-insurance reduction) ranged between 7.5% to 14.9% depending on the income rate at which the individual's contribution rate was set (those in the lowest income group were the least likely to participate).

The VAEB offers a simpler value-based user charger program, that is, the 'Best-Price-Euro'. Under this program, insurees are reimbursed €1 per medication package if they switch to a cheaper generic product.

Source: (195)

In 2015, patients spent €708 million on user charges within Austria's social insurance system. Drug prescriptions represented the highest share of user charges at €409 million, or 58% of all user charges. This result is not surprising given all health insurance carriers implement user charges for pharmaceuticals. The second largest component of cost-sharing in Austria relates to medical practices at €152 million, while the smallest component is made up of the e-card fee charges by regional carriers (€38 million).

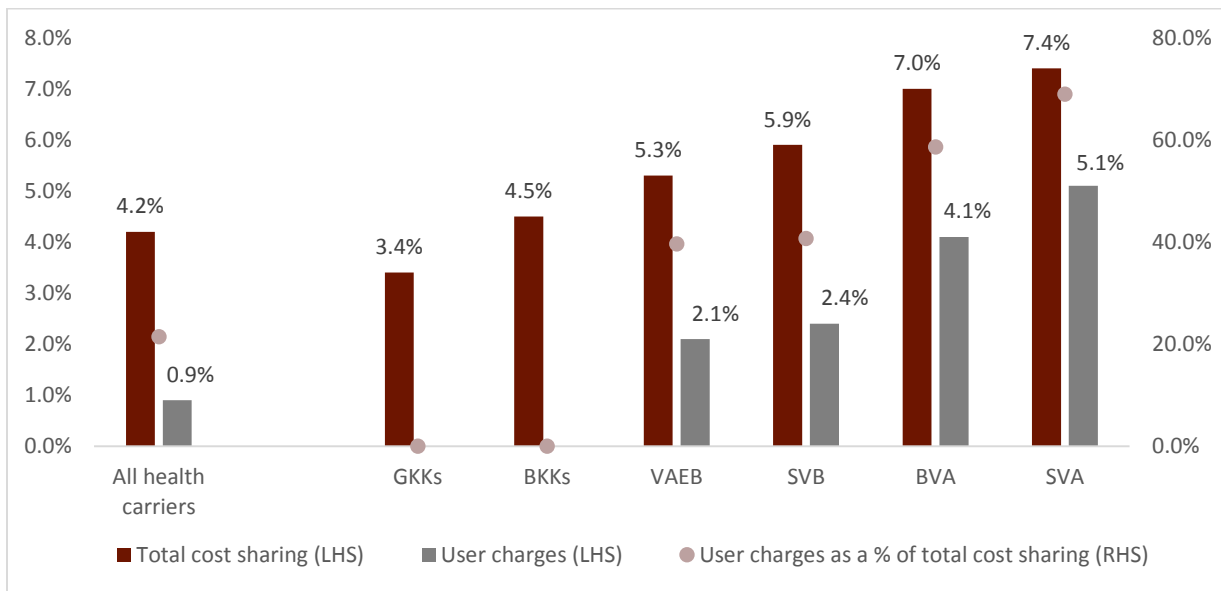
Figure 75: Revenue generated from user charges in Austria (millions) (2015)



Source: Information provided by the Ministry of Labour, Social Affairs and Consumer Protection (sourced from Finanzstatistik 2015)

Total fees (user charges and cost-sharing) as a proportion of total income differs across each health insurance carrier. Drawing upon 2013 data, user charges represented between 3.4% (all GKKs) and 7.4% (SVA) of total income. On average, 4.2% of total income is made up of revenue from cost-sharing (see Figure 76).

Figure 76: Share user charges and cost sharing in total income, 2015



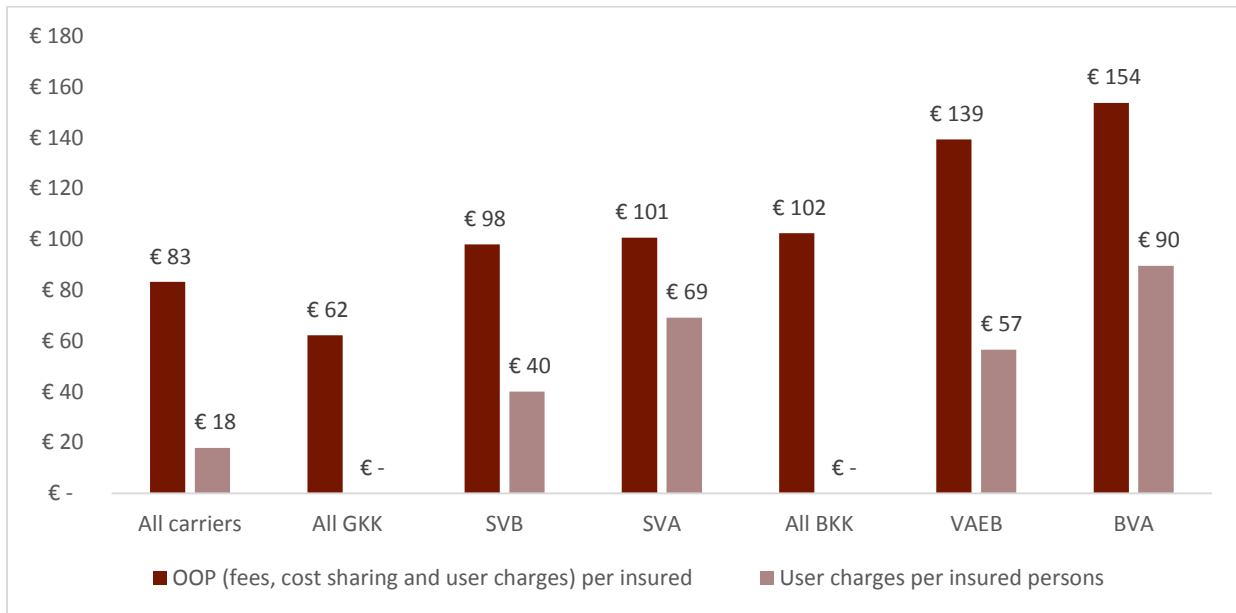
Source: Information provided by the Ministry of Labour, Social Affairs and Consumer Protection (sourced from HVSV)

The final figure within this section compares the cost per insuree between total fees, cost sharing and user charges, and only user charges. User charges for GKKs and BKKs is €0, which reflects the fact, that in technical terms, these carriers have not implemented user charges (i.e. only the €11 e-card service fee).

For all remaining carriers, the proportion of user charges within OOP varies significantly. For example, 68% of OOP within the SVA can be attributed to user charges, compared to 41% within the SVB and VAEB.

For further information, please see Volume 4 – Situational Analysis.

Figure 77: User charges per insuree across health insurance carriers (2015)



Source: Based on data from Finanzstatistik (2015)

Table 52: User chargers for services among Austrian social security institutions

Type of service	ASVG ^a	GSVG ^a	BSVG ^a	B-KUVG ^a	VAEB
Medical assistance	€11.35 services per calendar year ^b	20% (or 10%) co-insurance rate ^c	€9.61 contribution per treatment	10% of the contracting authority for certain services defined in the Articles of Incorporation	Treatment contribution of 7% of the contract rate ^d
Dental treatment: Preservative-surgically	As above	As above	As above	Co-insurance rate of 10%	Co-insurance rate of 20%
Dental treatment: Orthodontics (jaw regulation)	As above	Additional payment of 50% of the respective contract	Additional payment of 50% of the tariff costs	Co-insurance rate between 10-20%	Co-insurance rate of 30%
Children and adolescent services	-	-	-	-	-
Dentures	€11.35 services per calendar year (same charge as that specified under 'medical assistance'), plus additional payment according to Articles of Incorporation	20% of the insurer's costs 50% of contract for skeletal metal prosthesis and solid metal crowns on bracing teeth with partial denture	Additional payment of 25% for total plastic prostheses 50% for metal framework prostheses and staples	Co-insurance rate of 10%	30% co-insurance rate
Hospital care	10% for the first 4 weeks of nursing care Only for relatives ^e	_e	10% for the first 4 weeks of nursing care	_e	_e
Drugs			€5.85 prescription fee		

Type of service	ASVG ^a	GSVG ^a	BSVG ^a	B-KUVG ^a	VAEB
Medical aids	Co-insurance rate of 10%, minimum €33.20) (for visual aids min. 99,60 €) ^f				
Aids	Co-insurance rate of 10% (minimum €33.20)	Co-insurance rate of 20% (minimum €33.20)	Co-insurance rate of 10% (minimum €33.20)	Co-insurance rate of 10% (minimum €33.20)	Co-insurance rate of 10% (minimum €33.20)
Sick pay	-	-	-	-	-
Health insurance (nach § 139 Abs. 2a and 2b ASVG)	-	Not provided	Not provided	Not provided	-
Rehabilitation	-	Not provided	Not provided	-	-
Screening/medical check-ups of adolescents	-	-	-	-	-
Public health	Cost of the KVT				
Organ transplant (registration and registration costs)	-	-	-	-	-
Medical home care	-	-	-	-	-
Maternity benefits	-g	-g	-g	-g	-g

Note: ^a ASVG: GKKs, BKKs, PVA, AUVA; GSVG: SVA and AUVA; BSVG: SVB; B-KUVG: BVA. ^b Amount for the calendar year 2018; The collection will take place in November 2017. ^c Pay lower contribution rate if health goals are reached. ^d In the case of the use of medical assistance within the framework of the pilot project "diabetes mellitus health diabetes" as well as within the framework of the mobility project model region Mürztal pilot project "Movement as a drug", the treatment contribution must be 0%. ^e Cost contributions to be made on basis of national legislation, provided health insurance hasn't collected deductibles under social insurance law. ^f Cost of takeover by insurance carriers is up to a maximum amount as outlined in Articles of Association. Maximum amount differs across insurers. ^g Corresponding costs must be paid for medicinal products and medicinal aids.

5.3.5 Impact of user charges

Over the past 30 years in the EU, there has been a shift from public funding (through taxes and social health insurance) towards private funding (particularly through OOP payments) (196). As previously mentioned, the evidence around user charges has not directly aligned with what economic theory would suggest. More specifically, there have been concerns about the impact of user charges' impact on a health systems' efficiency, health outcomes and equity.

An overview of the impact of user charges on equity, demand for healthcare services, and expenditure is provided below.

Table 53: Impact of user charges

Area	Impact
Equity	Essentially a 'tax on the ill', given this group consume a relatively high proportion of healthcare services. Low-income individuals less likely to access healthcare services.
Demand for healthcare	Reduction in necessary and unnecessary healthcare services as patients unable to always distinguish between and high and low value healthcare. Impact on patient often limited by influential role of doctors in prescribing (drugs). Impact depends on level of user charge (i.e. price inelastic if user charge makes up small % of income).
Expenditure	No clear evidence on impact – can reduce expenditure in the short-term, however, long-term costs can increase due to delays in accessing care ('squeezed balloon effect'). Limited impact on expenditure if there are numerous exemptions.

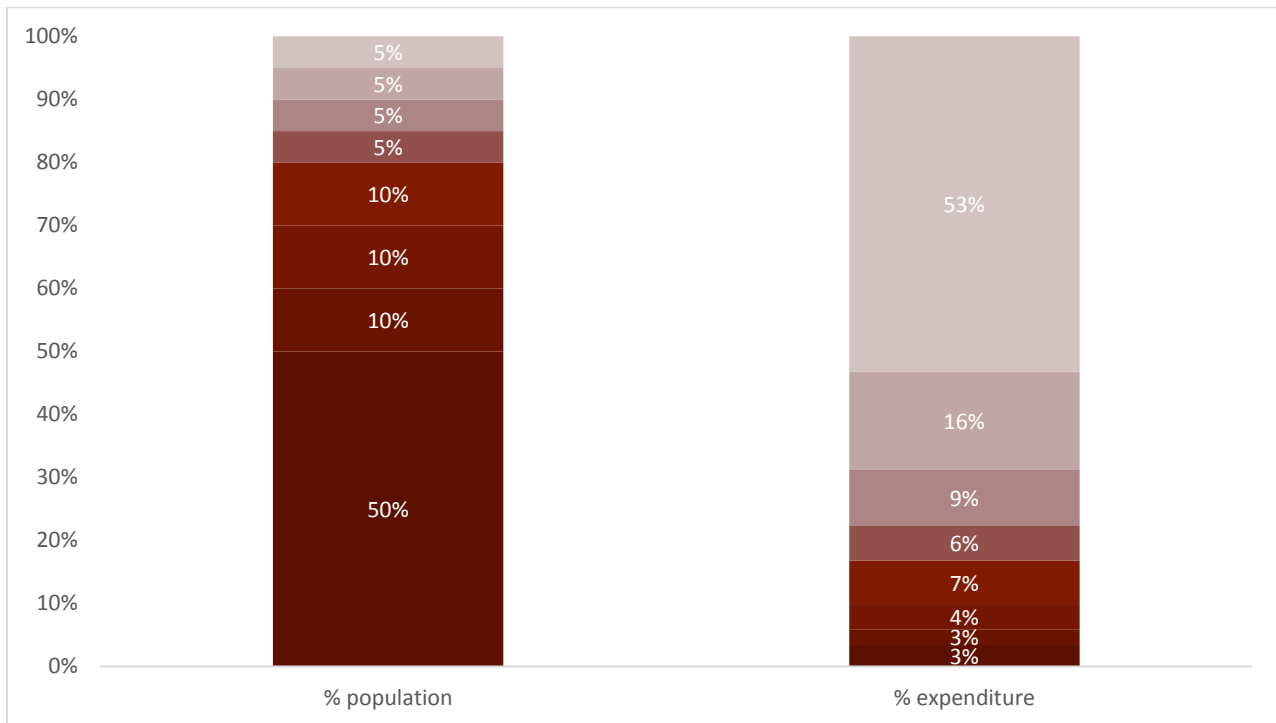
Source: See descriptions below.

Impact on equity

User charges may lead to an unequal reduction in health care utilisation and thus health. Specifically, in Western countries, such as Austria, a small proportion of the population (e.g. the elderly and/or chronically ill) contribute to a significantly higher proportion of health care expenditure. This is demonstrated in Figure 78, which shows the proportion of the German population and their aligning healthcare expenditure. Specifically, 5% of the population in Germany consume 53% of total healthcare expenditure (24% in the Netherlands), this figure increases to 79% for 10% of all patients. Similar results are found in France where 20% of the top healthcare consumers make up 60% of total user charges (i.e. average yearly user charge of €1,327 for the top 20% compared to €182 for the remaining 80%) (197).

Given most healthcare expenditure is consumed by a relatively small group of patients (i.e. the sick and/or elderly), user charges essentially act as a 'tax on the ill' (198).

Figure 78: Distribution of health expenditure for the German population



As those who are unhealthy are more likely to be from lower socio-economic backgrounds, user charges have an even greater impact on access to care for vulnerable groups. For example, as discovered within the RAND HIE (199) and confirmed through various other studies, low income individuals, and other vulnerable groups, are more likely to forego care, including essential care, in response to user charges

(see Table 54) (182,200). A recent detailed case study from the Netherlands the impact of the annual deductible on access to specialist medical care is provided in Table 55.

Table 54: Impact of user charges on equity (overview of academic studies)

Study	Country	Description
Rückert <i>et al.</i> (2008)	Germany	Germany's Praxisgebuehr (primary care flat rate payment) delayed access to care for young/healthier people. In regard to per capita income, 67.9% of those on 'very little income' delayed seeing a physician, compared to 42.6% of those on 'very high income'.
Schoen <i>et al.</i> (2010)	Various*	In all countries, except the UK, those on below average income were more likely to have experienced 'at least one access barrier due to cost' (e.g. in Germany, 27% vs 17%, and in the Netherlands, 13% vs 3%).
Chandra <i>et al.</i> (2010)	US	Retirees in poor health had greater reductions in spending on physician visits and prescription drugs than those in good health (3% and 8% reduction in physician visits and drugs, respectively, for health retirees compared to 15% and 27% for unhealthy retirees).
Chernew <i>et al.</i> (2008)	US	Patients from low-income backgrounds are more sensitive to drug co-payments than middle- to high-income patients (i.e. low-income patients less likely to adhere to medications, particularly for Statins).

Source: (193,200–204)

Note: *Australia, Canada, France, Germany, Netherlands, New Zealand, Norway, Sweden, Switzerland, US and UK.

Table 55: Case study - Impact of the Dutch compulsory deductible on specialist referrals

<p>Setting</p> <p>In the Netherlands, patients are charged a €385 deductible per year. At the outpatient level, the deductible is charged to outpatient specialists, but not GP consultations. The deductible is charged if the patient follows the GP referral to a medical specialist.</p> <p>Objective</p> <p>To determine the impact of the deductible on non-compliance with medical specialists care (i.e. patients not following up with GP referrals to specialist).</p> <p>Results</p> <p>Between 2008 and 2013, the annual deductible increased from €150 to €385 per year, over the same period, the non-compliance rate grew by 7 percentage points (i.e. from 20% to 27%).</p> <p>Non-compliance rates were higher for:</p> <ul style="list-style-type: none">• younger patients (i.e. 31% for those aged 25-39 years, 26-27% for older patients, and 25% for children)• those with multiple chronic diseases (i.e. 28-29% for those with at least 1 chronic condition, compared to 26% for those without a chronic condition)• those living in urban deprived areas (i.e. 28% for those living in urban deprived areas, compared to 27% for those in other areas). <p>Source</p> <p>Van Esch <i>et al.</i> (2017). Increased cost sharing and changes in noncompliance with specialty referrals in The Netherlands. <i>Health Policy</i>, 121, pp.180-188.</p>
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Source: (205)

Impact on demand for healthcare

One of the main aims of user charges is to shift financial responsibility to the patient to reduce unnecessary health care utilisation. A systematic review of recent evidence confirms that the vast majority

of studies show that user charges reduce the use of emergency department, outpatient prescription drugs, general practitioners and specialists (206).

Evidence, both from the RAND HIE (207), as well as recent literature reviews have confirmed that individuals do respond to the existence or to increases in user charges by reducing their health care use (182,200,206,206,208). However, the argument that user charges increase efficiency relies on the assumption that patients have the information and knowledge to make rational judgements and decisions over the necessity of particular health care interventions. Evidence has shown that this assumption does not hold for the majority of patients. Both the RAND HIE (199,207), as well as various reviews and studies have confirmed the inability of most patients to distinguish between high and low value care. As a result, user charges often lead to a reduction in both essential and nonessential care (182,183,200).

With regards to outpatient care, a systematic review of the literature found that user charges do reduce utilisation, however a few outliers saw no effect (206). Evidence on the impact of the German Praxisgebuehr does show a slight reduction in outpatient physician visits, but not significant enough to generate cost savings (191,192). Further, the impact of the co-payment on demand was only apparent during the transitory year in 2004, after which demand for physician visits remained the same (191).

The impact of user charges on utilisation differs by the amount of the user charge, as well as the population subgroup. In regards to the user charge amount, in Sweden, where user charges make up a relatively low proportion of income, their increase over time had a minor impact on health care utilisation (i.e. patients are price inelastic when user charges are low) (209). The impact of user charges on healthcare utilisation also depends on the relative power of other stakeholders. For example Gemmill *et al.* explain the limited response to prescription drug charges, due to the influential role of doctors in prescribing, which means patients' drug demand is relatively price inelastic (182). Moreover, healthy patients are more likely to reduce health care use in response to higher OOP than chronic patients as their health care use is generally not as essential to their immediate health (182). However, the difference in reduction in health care use between high and low income individuals, due to OOP payments representing different shares of their income, leads to equity concerns.

Impact on health expenditure

Pharmaceutical spending: Gemmill *et al.* confirmed in their review of OECD countries, that the impact of user charges on total prescription drug expenditure and drug prices are unlikely long term (182). Most included studies find that increased cost-sharing resulted in a slight reduction in total pharmaceutical

expenditure and a shift of cost burden to patients, however the magnitude of the impact on total cost depends on the amount the user charge increases costs, as well as the types of drugs or which segment of the population it targets (182).

There is limited evidence of the impact reference pricing has on long term pharmaceutical expenditure. Gemmill *et al.* suggest that it is unlikely that such user charges can give long term pharmaceutical cost control, rather this mechanisms simply shifts costs towards patients (182). Their review does find evidence of drug prices dropping in response to reference pricing, however findings suggest that changes in drug prices are likely to cancel out - i.e. while some drug prices drop, others increase to meet the reference price (182). Thus, the introduction of reference pricing is unlikely to lead to a decrease of pharmaceutical expenditure at a given level of consumption.

Total health expenditure: The impact of user charges on total health care spending is not unanimous with studies finding both a positive and negative impact on long term expenditure. The RAND HIE brought the expectation that total spending may decrease in response to increased cost-sharing (199). However, reviews of the literature ever since conclude that the effect of cost-sharing on total health care expenditure is more likely to be an increase (182,200). The potential for a so-called 'squeezed balloon' effect as well as increasingly expensive new technologies are considered potential barriers to a reduction in spending (183,200). The squeezed balloon effect refers to the shift in costs from preventative/maintenance health care to more acute health care (183,200). The RAND HIE, as well as reviews of studies ever since, have confirmed the possibility of such an increase in total health costs (199,200). Gemmill *et al.*'s literature review finds that prescription drug charges are likely to lead to an increase in costs due to increased usage of alternative services such as in-patient care, long-term care, as well emergency department admissions (182).

Outpatient specific studies suggest similar results. In addition to the German Praxisgebuehr not generating sufficient cost saving due to limited response from patients (191–193) , the policy resulted in high amounts of administrative costs, which caused its abolishment (190). Moreover, supporting the squeezed balloon hypothesis, decreased preventative care utilisation may also result in increased intensive/acute care costs in the long run. For example, a Danish study found that high risk individuals were almost twice as likely to attend a heart disease screening if it was provided free of charge rather than if they had to pay a fee OOP (210).

The distribution of health spending across populations is highly skewed given the majority of services are used by a narrow segment of the population (e.g. elderly, those with chronic conditions) (see Figure 78).

Since increased cost-sharing has a greater effect on healthier patients, it is likely to skew the spending distribution further (i.e. healthy will consume even less) (200). Chronically or acutely sick people are unlikely to be as affected by an increase in cost sharing, given their lack of control after initiating treatment (200), as well as treatment being essential for many chronically ill patients.

Lastly, the impact of user charges on controlling health care expenditure is limited given the existence of numerous exemption policies to protect vulnerable patients.

5.3.6 Protection mechanisms

The above-mentioned impact on equity highlight the importance of protection mechanisms for vulnerable groups. Such protection mechanisms come in forms of capping total OOP spending, reduced fees, as well as exemptions. All the considered European SHI Systems have some form of protection mechanism in place (see Table 49). Such mechanisms have the potential to improve health care efficiency and equity.

Analysis of the variation of equity in health by type of health insurance finds that annual caps or exemptions reduce the likelihood that those on low incomes and/or chronically ill will avoid treatment due to costs (203). A recent Swedish analysing access to healthcare by education level over time found that among people of poor health, those who are less educated have lower access to care (209). However, they do find that the increase in user charges over time, only had a marginal impact on the extent of the inequality in access to care, which they attribute to both relatively low levels of user-charges as well as Sweden's extensive protection mechanisms, such as their payment cap to protect the chronically ill (209).

5.3.7 Value-based cost sharing

The negative impact of user charges on equity, access and healthcare expenditure has led to an increase in the employment of value-based cost sharing. Value-based cost-sharing entails nudging individuals towards more essential or more valuable care, in order to decrease the likelihood of patients limiting their access to essential care. The intended goal is minimise waste and spending on health and thus maximise efficiency.

Cost-sharing can target health care utilisation towards high value-care, both through rules/mandates, as well as through incentivising patient or provider behaviour (211). Mandating a reduction in low-value care use can be, for example, an automatic switch from a branded product to a generic if available (i.e. generic substitution) (211). It has been shown that value-based user charges have the ability to increase use of high-value services and drugs, however they may bring with them high administrative costs, as well as equity concerns (211).

Across European SHI systems, value-based approaches have been applied to encourage utilisation of preferred providers, more effective outpatient prescription drugs, generic utilisation, as well as use of preventative services or behaviour (see Table 56).

Table 56: Value-based approaches across providers, outpatient prescription drugs and prevention

Policy area	Policy	Country
Outpatient drugs (therapeutic value)	Differential cost sharing by level of clinical effectiveness (less cost-sharing for more effective)	France
Outpatient drugs (clinical indication)	Level of cost-sharing dependent on severity of disease to treat	Belgium, Finland, France, Norway
Outpatient drugs (clinical indication)	Patients must meet clinical conditions to determine effectiveness	Finland
Outpatient drugs (relative price)	Lower cost-sharing for cheaper drugs vs higher cost-sharing for drugs with a generic alternative	Belgium, Denmark, Finland, France, Germany, Netherlands
Prevention	Preventative behaviour incentivised through bonus schemes, or different co-payments	Belgium, Germany
Use of preferred providers	Cost-sharing determined by whether the provider is preferred or not	Netherlands (limited – insurers can offer this, but are not obliged to)

Source: (211)

Value-based cost-sharing: prescription drugs

Value-based cost sharing is most commonly applied to outpatient prescription drugs. Within this context, value, can refer to a range of factors such as economic or therapeutic value, clinical indication/therapy area/patient need, or relative prices to substitutable drugs (211). Majority of the literature on value-based cost-sharing revolves around reference pricing. Reference pricing is expected to both switch

patients' demand to cheaper generic drugs, but also to reduce prices of pharmaceuticals subject to reference pricing regimes, and reduce total pharmaceutical expenditure.

Various systematic reviews have shown that reference pricing can in fact effectively shift prescription drug use to cheaper drugs (212,213). However, there is evidence of contrary results, for example, Swartz in her review argues that this may be due to a lack of patients' understanding of the interchangeability of branded and generic drugs (200). Regarding impact on pharmaceutical expenditure, reference pricing can decrease prices of some products, while cheaper generics may raise their price to meet the reference threshold, this cancelling out any cost savings (182,211) (182). Thus, reviews have found that reference pricing is unlikely to generate overall long term pharmaceutical cost control, and instead simply shifts costs towards patients (182).

Figure 79: Case study - Impact of value-based user charges for prescription drugs

<p>Setting</p> <p>Claims data from two US employ-sponsored health plans was analysed to determine whether more aggressive multi-tiered formularies policies had a greater impact on utilisation on three drugs (i.e. ACE inhibitors, proton-pump inhibitors, and statins).</p> <p>Results</p> <p>Those enrolled in the more aggressive health insurance plan experienced a slower growth in the probability of using a drug, further, there was a greater shift from the plan to the enrollee. Those in the aggressive healthcare plan were more likely to switch from tier-3 statins (most expensive tier) to either tier-1 or tier-2 medications (49% vs 17%). Similar results were found for ACE inhibitors and proton-pump inhibitors.</p> <p>Source</p> <p>Huskamp <i>et al.</i> (2003). The effect of incentive-based formularies on prescription-drug utilisation and spending. <i>The New England Journal of Medicine</i>. Vol 349, pp. 2224-2232.</p>

Source: (214)

Value-based cost-sharing: preventive services

Exempting preventive health care services from user charges or incentivising healthy/preventative behaviour is another type of value-based cost-sharing.

In some SHI systems with user charges in place for outpatient primary care (185), the decision to exempt preventative care from user charges acts to direct patients to valuable care. As Danish studies have shown, individuals are almost twice as likely to attend preventative and screening procedures if they are provided free of charge, in the latter case even for individuals at particularly high risk of poor health (210,215).

Similarly, in the Netherlands, Belgium and Germany, bonus schemes have been introduced to encourage patients to partake in prevention schemes (i.e. supporting healthy behaviour and early detection of chronic diseases) (211).

Figure 80: Case study - Impact of value-based user charges for preventative services

<p>Setting</p> <p>Systematic review of differential user charges between primary and secondary care across eight studies covering six countries.</p> <p>Results</p> <p>Five studies examining the impact of greater secondary care user charges found that most (n=4) saw a decrease in secondary care utilisation, and three showing an increase in primary care utilisation. One study evaluating the impact of a reduction in primary care user fees saw an increase in primary care utilisation. The introduction of a fee for those who access secondary care without a referral led to a reduction in primary care utilisation (one study). Lastly, one study found that higher secondary care user charges led to higher utilisation of primary and secondary care. The authors noted that caution should be taken when interpreting results given quality of studies examined.</p> <p>Source</p> <p>Hone <i>et al.</i> (2017). Does charging different user fees for primary and secondary care affect first-contacts with primary healthcare? A systematic review. <i>Health Policy and Planning</i>. Vol 32(5), pp. 723-731.</p>

Source: (216)

Limitations of value-based cost-sharing

Although value-based cost-sharing addresses certain issues associated with user charges, it does have limitations of its own.

The first limitation concerns efficiency. Specifically, developing and up-keeping value-based user charges come with a high administrative burden which has led several countries to cancel value-based schemes,

for example, Denmark, Norway and Sweden (211). Due to these additional costs, the impact of user charges on efficiency are often not felt until the long-term.

Secondly, information asymmetry and the role of physicians' in administering healthcare limit the patients' ability to respond to user charges (211). Moreover, in order for value-based cost-sharing to achieve its intended effect, it is important to have a robust information system that is transparent to providers and patients (211).

Lastly, the specific example of France highlights the importance of careful policy design to accompany value-based approaches. In France the existence of additional insurance covering OOP payments, has limited the impact of reference pricing on patients (211).

5.3.8 Policy options: User charges

User charges could act as a signal to consumers to reduce consumption of unnecessary, low-value care, while simultaneously raising revenue. For this reason, they are a popular tool among health policy-makers. However, for the following reasons, caution should be taken when implementing non-targeted user charges. First, user charges reduce consumption of both high- and low-value care as often patients are unable to differentiate between the two. A delay in consumption of necessary, high-value care may lead to worsening health conditions and thus greater long-term health expenditure. Second, those who are relatively sicker and poorer, consume a disproportionate amount of healthcare services. User charges therefore act as a 'tax on ill', which limits their revenue raising potential, given exemptions usually apply to such patients.

For reasons outlined above, we have proposed policy options which advocate user charges that are fairer, more equitable, and linked to value. It is important to note that we do not recommend an increase in user charges, rather change in the composition of user charges to maximise efficiency, for example, by linking payment to the value of care provided.

Fairer, more equitable pharmaceutical expenditure caps

Out-of-pocket expenditure for pharmaceuticals is capped at 2% of net income for all insured people. Although a positive initiative, given the capped amount is independent of an individual's income, the exemption policy fails to reflect insurees ability to pay. We propose a fairer more equitable system by dividing the pharmaceutical expenditure cap into three levels. The first level applies to low-income earners who would see their pharmaceutical expenditure cap reduced from 2% to 1.5%. The second level, comprising middle-income earners, would experience no change in their pharmaceutical expenditure cap

given it would remain at 2%. Lastly, the cap for third-level, high-income earners would increase to 2.5% (see Table 57).

Table 57: Proposed changes to the pharmaceutical expenditure cap

Income-level	Proposed pharmaceutical expenditure cap on net income
Low	1.5%
Medium	2.0%
High	2.5%

To ensure insurees are allocated to the appropriate level, which reflects their true ability to pay, the individual's total income could be taken into account (i.e. income from primary form of employment, as well as income derived from property ownership or other types of economic activity). Social health insurers do not have access to information on total income due to privacy reasons. To overcome this barrier, it is proposed that the relevant tax office provide social health insurers with a brief statement on which co-insurance rate should be applied to individuals, without reporting the actual overall income of the individual.

The exact income brackets for each of the three-levels has not been laid as this should be discussed and debated within government. To the extent possible, the chosen brackets should ensure fiscal neutrality. However, if this cannot be ensured, consideration should be given to government compensation within the short-term (e.g. five years), to allow social health insurers time to re-adjust to a reduced revenue stream.

The impact of the policy should be evaluated within the short-term. If the policy generates a positive impact on patients and insurers, the cap could be extended to all inpatient and outpatient healthcare services.

Lastly, the proposal outlined above will benefit those on lower incomes, this does not mean, however, that changes should be made to existing exemption policies for vulnerable groups.

Legal considerations

There are no specific legal observations or concerns in this respect. Implementation could be done as well on legislative level as on level of ‘directives’ (Richtlinien) released by the HVSV (which is currently the case, § 31 Abs 5 Z 16 ASVG).

Value-based user charges

Value-based user charges are limited in Austrian social health insurance, with only the SVA and VAEB experimenting with such policies (see Figure 74). A reason for this may be the limited use of health technology assessments, which inform policy-makers about the clinical- and cost-effectiveness of a drug/service/device. Therefore, as a first step, an improvement in HTA processes in Austria is required (e.g. enhance transparency, improve coordination) (see section 5.2.4). Hereafter, it is recommended that social health insurers draw upon findings from HTAs to determine co-insurance rates across products/services (i.e. reducing user charges for high-value care).

The development of robust HTA systems is likely to take time. Therefore, in the meantime, social health insurance carriers could draw upon experiences and findings from the SVA and VAEB to implement other forms of value-based user charges. For example, by linking user charges to engagement with preventive care and/or consumption of generics (see Figure 74 for further details). However, such policies are behavioural-based, which for reasons outlined below, are associated with implementation issues.

Ideally value-based user charges would consider individual circumstances. However, such policies are complex (e.g. various exemption policies), which in turn increase administrative costs. Therefore, user charges should be linked to the effectiveness of a product/medical device/service, as determined by a robust HTA. This approach is adopted by various countries (e.g. reduced or no co-payments for generic products).

Legal considerations

There are no specific legal observations or concerns in this respect. Implementation could be done as well on legislative level as on level of ‘directives’ (Richtlinien) released by the Hauptverband (which is currently the case, § 31 Abs 5 Z 16 ASVG).

Convergence of user charges

As outlined in Table 52, differential user charges are applied across health insurance carriers. This creates inequalities across insured populations, and may restrict certain individuals from accessing appropriate healthcare services. For this reason, it is recommended that wealthier funds (such as the SVA) reduce their co-insurance rate, for example, from 20% to 10% or less for ambulatory care so as to align with rates set by the BVA (10%) and VAEB (7% by 2018). It is important to note that this is already occurring as evidenced by the drop in revenue from user charges, specifically from €152.2 million in 2015 to €128.7 million in 2016 (217).

Naturally, user charges will converge if carriers are amalgamated, as proposed under structural models 1, 2 or 3 (see Table 3). In this instance, user chargers must be revised to ensure all insurees have the same or better access to healthcare. However, harmonisation of user charges should be slowly phased in to take into account affordability, given revenues will be reduced.

Legal considerations

There are no specific legal observations or concerns in this respect, either. It should be considered, however, that user charges for all employed insurees would cause quite huge additional administrative costs if they were collected by the funds themselves.

Summary of policy options for user charges

In summary, user chargers should be implemented with caution given, if they are not targeted, are likely to disproportionately impact sicker/poorer populations. Further, blunt user chargers will reduce access to both valuable and non-valuable services, which may lead to higher expenditure in the long-term. For these reasons, we have developed policy options that aim to improve equity and efficiency in the system. Regarding the former, we propose a three-tiered pharmaceutical expenditure cap based on a patient's financial means, with those from lower socioeconomic backgrounds paying less. To improve efficiency, all social health insurers should consider implementing value-based user charges drawing upon findings from robust HTAs.

5.4 Investment in healthcare services

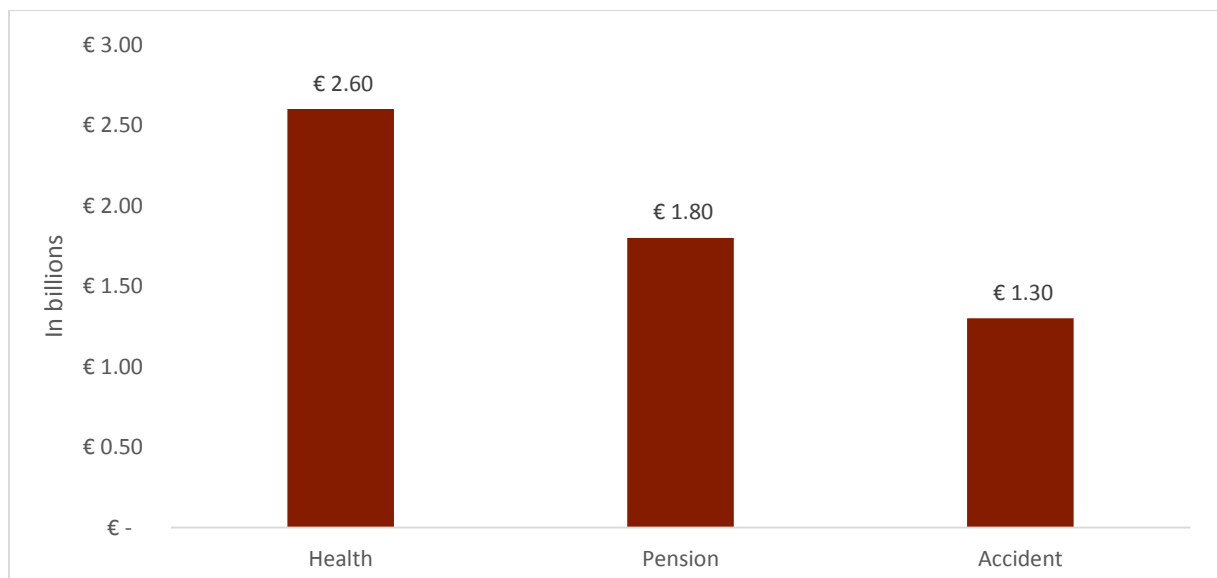
To improve access to high-quality care, social insurance carriers invest heavily into service provision. Funds for investment are derived from a portion of reserves (i.e. assets less liabilities), which can be used to ‘make’ (developed and owned by the insurer) or ‘buy’ (purchased from a provider) healthcare services. Alternatively, insurers may enter into an arrangement which combines the two funding models.

Section 5.4 first outlines the level of reserves within the social insurance system, with a specific focus on health insurance carriers. Second, an overview of how to efficiently invest reserves is provided. Specifically, when to make or buy healthcare services, and ways to coordinate investment.

5.4.1 Reserves within the social insurance system

Reserves within the social insurance system represent the sum of assets less liabilities. At the end of 2015, the sum of reserves across all three insurance pillars equated to €5.7 billion. Of this amount, 47% was attributed to health insurance, compared to 31% and 22% for pension and accident insurance, respectively (see the figure below). It is important to note that reserves are not necessarily liquid as they may also include items such as real estate and owed contributions.

Figure 81: Level of reserves by insurance pillar, in billions (2015)

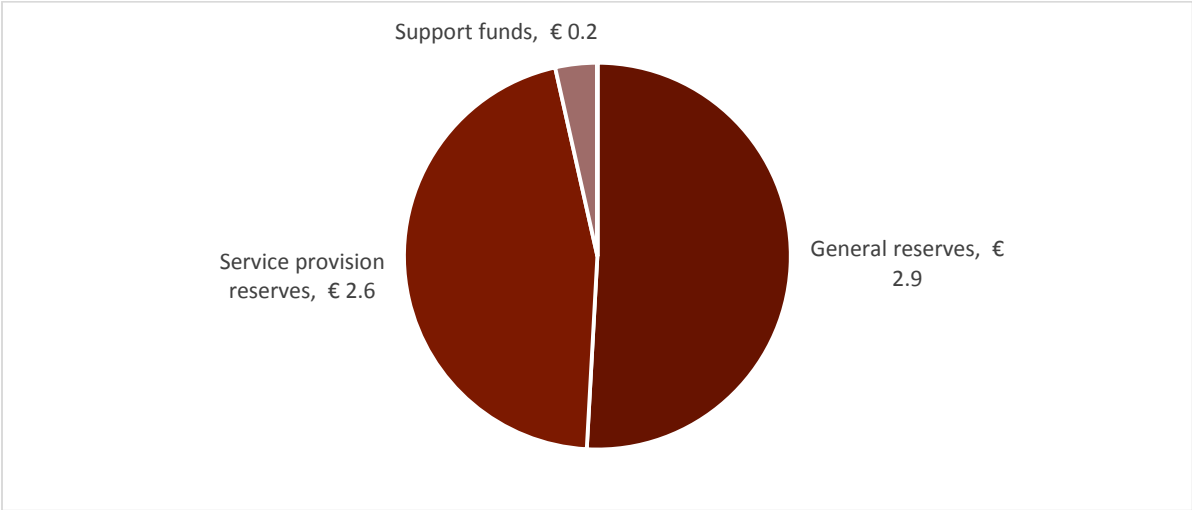


Source: (218)

Reserves can be broken into three exclusive groups, namely, general reserves, service provision reserves, and smaller special reserves (i.e. support funds and replacement procurement reserves). In regard to service provision reserves, health insurance carriers are required to build up reserves totaling 1/12 of total

service expenditures to cover fluctuations in contribution income and benefit payments. A breakdown of reserves by each of the three categories is outlined in the figure below, which shows that just over half of reserves are considered 'general reserves'.

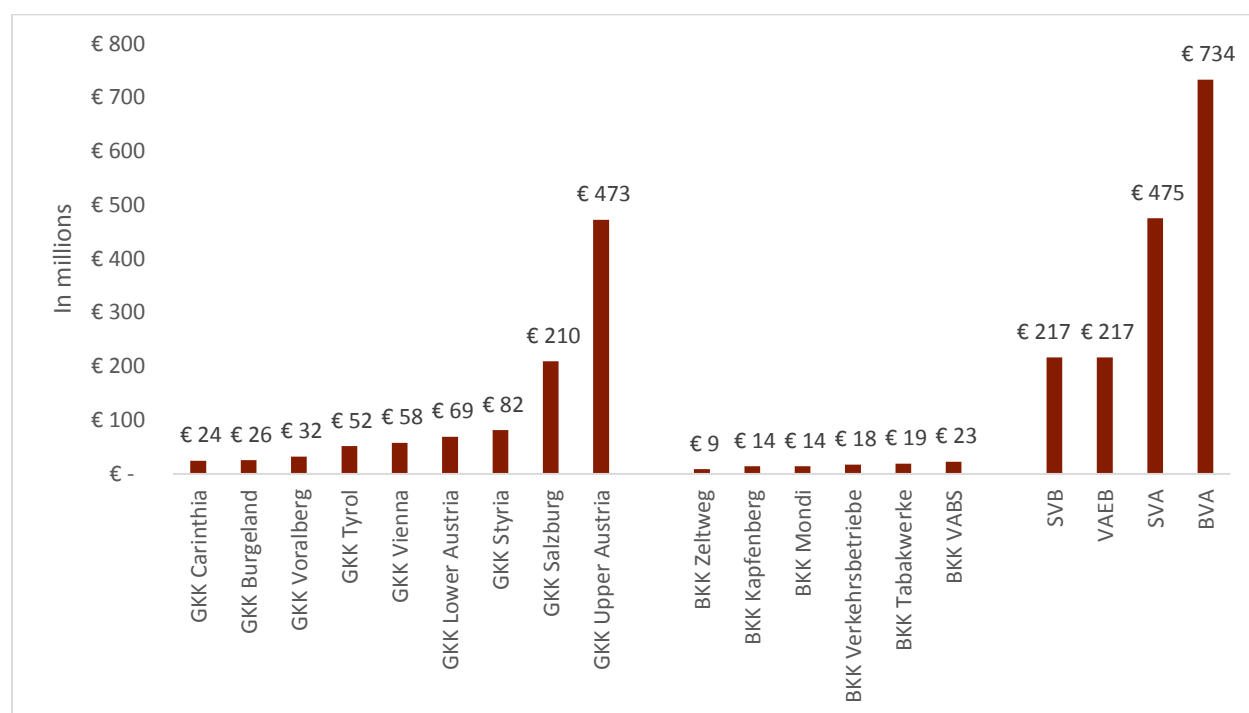
Figure 82: Net asset structure of social insurance carriers, in billions (2015)



Source: (218)

Reserves at the individual health insurance carrier level are provided in Figure 83 figure below. Results from the data reveal significant differences, with reserves ranging from €9 million (BKK Zeltweg) to €734 million (BVA). As a generalisation, reserves are greatest among carriers offering more than one insurance pillar, followed by GKKs and finally, BKKs.

Figure 83: Net assets of individual health insurance carriers, in millions (2015)



Source: (218)

As previously outlined, reserves comprise more than just liquid assets. Three significant forms of assets, in addition to cash, include real estate, contribution claims, and securities, loans and deposits. As shown in Table 58, there is no clear pattern in regard to the division of assets.

Table 58: Breakdown of assets as a proportion of total assets by health insurance carrier (2015)

Insurance carrier	Share of total assets		
	Real estate	Contribution claims	Securities, loans and deposits
GKK total	4%	59%	29%
BKK total	3%	18%	74%
VAEB	5%	15%	64%
BVA	7%	0%	80%
SVA	4%	56%	30%

Insurance carrier	Share of total assets		
	<i>Real estate</i>	<i>Contribution claims</i>	<i>Securities, loans and deposits</i>
SVB	0%	27%	49%

Source: (218)

5.4.2 Make, buy and concurrent sourcing of healthcare services

Make or buy

In a purely competitive market with numerous competitors, homogenous products, limited barriers to entry, and perfect consumer knowledge, it is often presumed that there will be an optimal allocation of resources. The healthcare market, however, is not ‘perfect’ for a number of reasons including information asymmetry, moral hazard, adverse selection, and imperfect information (219). For these reasons, provision of healthcare is not solely left to the private market, with payers of health care (e.g. social health insurers) employing a mix of in-house (make) and outsourced services (buy).

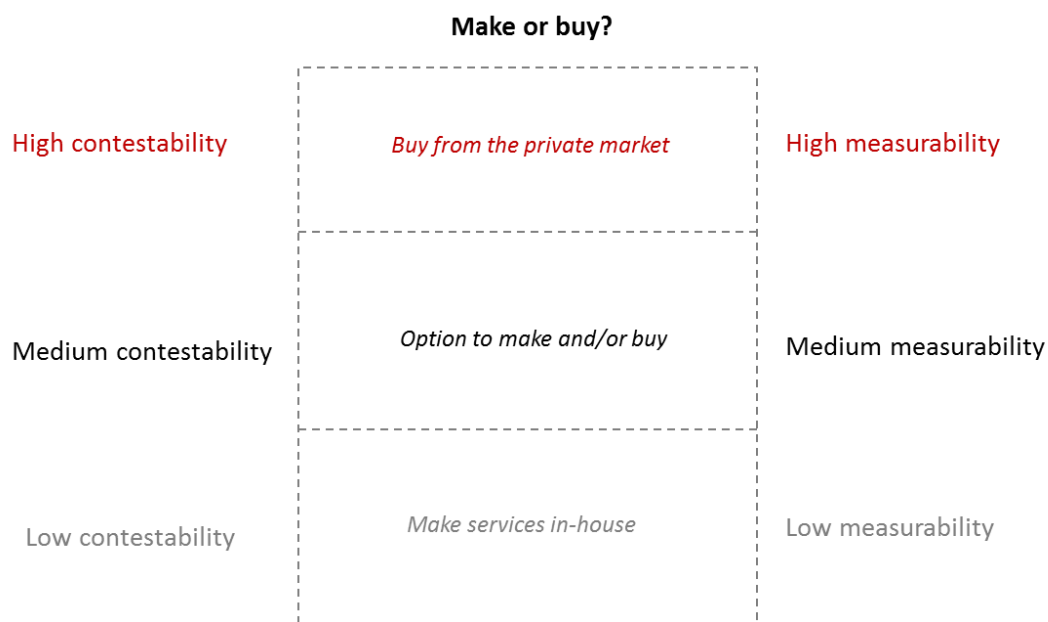
Despite ample literature on the topic, there is no consensus on whether to solely make or buy services. What is frequently reported, are the conditions which influence such decisions. In regard to the healthcare market, two salient factors determine whether services should be made or bought, *contestability* and *measurability* (220):

- **Contestability:** A market is contestable if the service operates in a market where there are low barriers to entry and exit. For example, expertise and reputation increase barriers to entry, which reduce contestability.
- **Measurability:** Ability to measure the inputs, processes, outputs and outcomes of a particular service. High measurability implies tasks can be easily defined and evaluated and therefore suitable for purchasing. For example, volume and prices of drugs and equipment are relatively easy to measure (220–222).

Each healthcare service, as specified by the World Health Organisation, can be placed along a continuum matrix, which ranges from high measurability and contestability, to low measurability and contestability (220,221). The ‘make or buy decision grid’ states that if a healthcare service operates within a highly competitive market and can be easily measured, then it should be contracted out to a private provider.

On the other hand, if there is a limited number of competitors (e.g. monopoly provider) and information cannot be easily collected and analysed, services should be provided in-house (see figure below).

Figure 84: Make or buy decision grid



Source: Adapted from (220)

When examining the broader literature on make and buy (i.e. outside the healthcare market), several additional factors were identified. These factors, including their impact on make or by decision making, have been outlined in Table 59.

Table 59: Additional factors impact make or buy decisions

Factor	Description	Impact on decision-making
Centrality of task	Whether the task is considered central or core to the organisation’s overall objective.	Tasks that are not considered critical are more likely to be outsourced (e.g. cleaning, catering). By outsourcing such tasks, more effort can be directed at fulfilling core competencies.
Asset specificity	Level of asset specificity used within production. This factor is closely	Idiosyncratic, nuanced assets are more likely to be produced in-house.

Factor	Description	Impact on decision-making
	related to contestability as high levels of specificity restrict market access.	
Irregular demand	Irregular or cyclical demand which is outside the control of the organisation.	If demand is irregular, organisations will be more likely to outsource relevant services as capital and labour may otherwise sit idle during downturns.
Labour expertise	Highly skilled staff often demand higher wages, which are generally provided in the private sector. Thus it can be difficult for the public sector to employ those with the required skill set.	Training staff to a specific level of expertise can be costly, especially if staff turnover is high. In this instance, it is preferable for organisations to contract highly-skilled workers on an ad-hoc basis.
Intellectual property	For example, patient records.	If an organisation's IP is highly sensitive, then services are more likely to be provided in-house.
Synergies	Complementary services across the organisation's supply chain.	Providing services in-house builds up internal capacity. In certain instances, improved capacity and knowledge in one area may enhance tangential components of the supply-chain, thus improving overall service provision. (see below)
Market failures	The healthcare market is often associated with market failures; that is, where the free market fails to provide an adequate level of service. This frequently occurs in rural and remote areas where demand is low, thus leading to inequitable access.	Where market failures occur, health insurance carriers should consider making their own services. Proper analysis is required to determine whether the market has in fact failed.

Source: (221–223)

Concurrent sourcing

Despite various factors outlined above, in practice, the decision to either make or buy is not straightforward. As a result, organisations are increasingly turning to mix methods of sourcing, which incorporate both aspects of make and buy (i.e. concurrent sourcing) (223).

Specific environments in which concurrent sourcing is supported by empirical evidence are provided in Parmigiani (2007) (223). These include where:

- There is technological uncertainty
- The organisation and supplier have complementary areas of expertise
- Economies of scope exist.

Relative to purely making or buying services, concurrent sourcing enhances an organisation's knowledge by fostering information sharing (i.e. learning from the provider). Information sharing is particularly pertinent during times of rapid unpredictable technological development, given it enhances the organisation's likelihood of adopting relevant, successful strategies. Therefore, in times of technological uncertainty, organisations should concurrently source (223).

The level of internalisation, that is, in-house production, falls on a continuum related to the organisation's level of expertise (i.e. there is a positive relationship between expertise and producing services in-house). In general, the organisation will have a high-level of expertise, but with certain knowledge gaps. Therefore, the organisation will be motivated to partner with the supplier to combine complementary areas of expertise (223).

Concurrent sourcing can improve efficiency as, where possible, services will be produced simultaneously as opposed to in silos (i.e. economics of scope). Specifically, simultaneous production leads to a 'fuller utilisation' of production inputs (between the organisation and supplier), which reduces average costs compared to when services are produced independently (223).

5.4.3 Policy options: Investment in healthcare services

Reserves and investment coordination

In addition to liquid assets, reserves among social insurance carriers also include items such as claims on contributions and real estate. Current financial reporting requirements delineate reserves according to the categories outlined above, yet all are termed as 'reserves'. This terminology is misleading given not

all reserves are liquid and in certain cases are required to fund essential services. For this reason, we recommend the following two policy options. First, only report assets that are liquid and not required to fund required services as reserves, to make it explicit that these assets can be used for investment purposes. Remaining items would then be classified as 'non-liquid assets'. And secondly, enhance the use of reserves via the following three options:

1. **Pooling all or a part of each carrier's reserves into a joint central fund**, administered by the HVSV. To encourage social insurance carriers to pool liquid reserves, the make-up of total reserves as a proportion of each carrier's contribution should be made clear. These proportions would then be used to allocate investment returns across the social insurance system (i.e. those who contribute more to the pool of reserves would receive greater financial returns from investments).
2. **Encourage joint investment without pooling reserves**, with contributions to investment based on each carrier's level of reserves.
3. Encouraging carriers who invest in healthcare services to **open up their facilities to all individuals, not just their insured population.**

Enhanced coordination of investment activities is associated with many benefits including: a) avoiding duplication of effort; b) improving allocative efficiency, thus improving insuree access to relevant services; and c) promoting specialisation and efficiency by assisting services to suitable carriers.

In regard to options 1 and 2 above, the following six high-level complementary recommendations regarding investment coordination have been provided:

1. Develop an overarching investment strategy for social health insurance, with all future investments being reported to a central agency
2. Require all future investments to align with the aforementioned investment strategy
3. Social health insurance carriers to jointly invest in facilities/programs that improve primary and public health (e.g. primary healthcare units, disease management programs, case management, dental clinics, and other joint competence centres⁵⁷); as outlined in option 3 above, these could be made open to all individuals, not just insured populations of carriers who have made investments.

⁵⁷ At present, only three joint competence centres exist - Integrated Care (Integrierte Versorgung), Therapeutic Products and Aids (Heilbehelfe und Hilfsmittel, HBI), and Transportation (Transportwesen, TW). See Volume 2- Situational Analysis for further details.

4. Use liquid reserves to invest in ‘bricks and mortar’ capital, which would be rented out to providers. Under this arrangement, insurers would not lose their reserves as they would earn rental income.
5. Utilise the target control mechanisms and joint virtual budgets at the Länder level to better coordinate investment in facilities (e.g. if the Länder have excess capacity in outpatient department, health insurance carriers could use this capacity for setting up PHUs or other outpatient clinics).
6. Formalise investment coordination between Federal States and health insurance carriers, which in turn would improve services across the spectrum of care.

Legal considerations

There are no legal impediments with respect to an enhanced financial reporting.

The ‘pooling’ of already allocated reserves, however, could be a problem with respect to the principle of self-governance as pooling of reserves would lead to a (partial) transfer between different groups of insurees (‘Versichertengemeinschaften’). According to the case law by the Constitutional Court, such transfers are lawful only insofar as there is a ‘sufficient personal and material link’ between the respective groups. As long as all insurance carriers benefit proportionally from such a central fund this has not be considered as an unlawful transfer, of course (for details see below Volume 2 chapter 11).

Make, buy or concurrent sourcing

As outlined in section 5.4.2, there is no clear rule as to whether insurance carriers should make or buy, given both sourcing options are associated with a range of advantages and disadvantages. Based on a review of the relevant literature, we recommend that prior to each investment decision, social insurers undertake a mapping exercise against each of the factors outlined in Figure 84 and Table 59. In particular, insurers should focus on aspects related to contestability in the market, and measurability of tasks and performance.

Notwithstanding the above, for the following reasons it is recommended that health insurance carrier invest partly in developing their own healthcare services:

- To improve knowledge and capacity, which could enhance their ability to negotiate more favourable contractual agreements

- To improve flexibility by offering a ‘fallback’ option should contractual agreements break down (i.e. as is the case now, carriers could employ additional physicians, who are not contracted, to provide services within their own healthcare institutions)

Legal considerations

There are some legal impediments with respect to providing services within the carriers’ own institutions such as § 339 ASVG (an agreement with the Chamber of Physicians is requested for establishment or enhancement of an ‘Ambulatorium’) or under the KAKuG (requiring a public assessment of needs). So this option would be subject to amendments by (of course, only simple) legislation.

Summary of policy options for healthcare investment

Reserves across the social insurance system, and specifically within health insurance, differ across carriers. However, gross value of reserves can be misleading and therefore difficult to compare. Specifically, reserves do not wholly reflect ‘leftover’ funds for investment purposes given figures also include non-liquid assets such as real estate and contributions owed. For this reason, it is recommended that only liquid assets be termed as ‘reserves’ within the remaining grouped as ‘non-liquid assets’. Liquid reserves could then be pooled into a central investment fund, with returns to carriers proportional to the level of investment made.

Using reserves, health insurance carriers have the option to make, buy or concurrently source healthcare services. No option is superior, therefore, decisions made by carriers should consider circumstances within the market, in particular, how contestable the market is and how well the service can be measured. Nevertheless, to improve the capacity and flexibility, it is recommended that carriers partially invest in producing their own services.

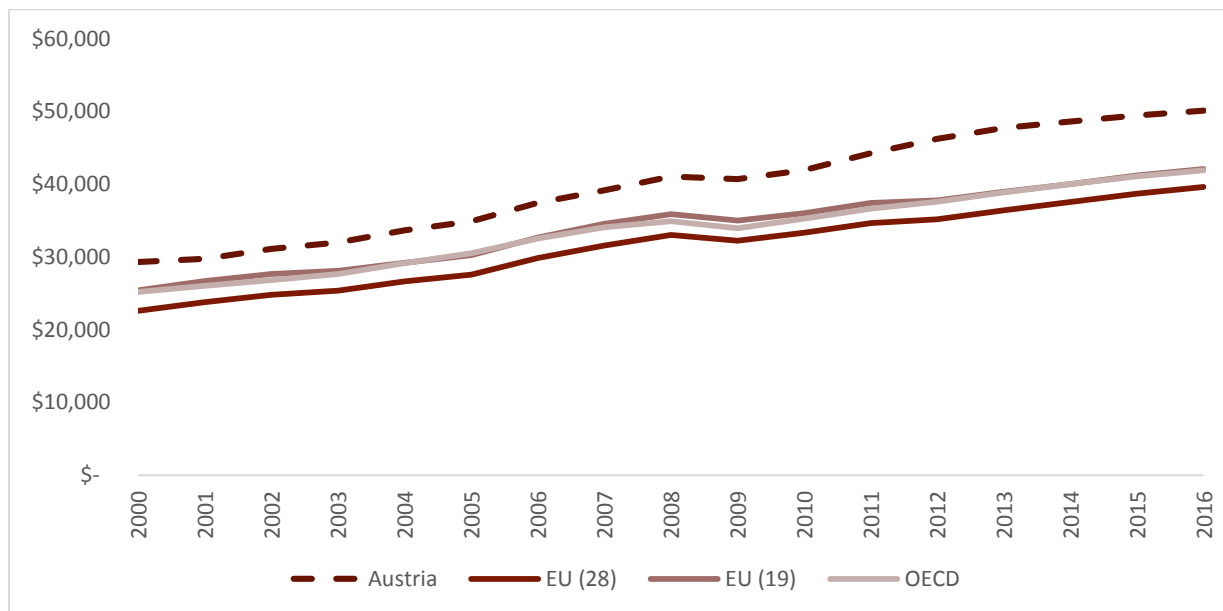
As previously outlined, liquid reserves could be pooled into a central fund to improve overall healthcare provision. To ensure monies within the fund are maximised, an overarching strategy, which all carriers would abide by, is recommended. For example, the strategy could outline appropriate competence centres to invest in.

5.5 Broadening the social welfare base

5.5.1 Historical economic performance

Within Europe, Austria is a strong economic performer, with a relatively high level of employment and GDP per capita. For example, since year 2000, Austria has recorded a higher GDP per capita (total, and in terms of per hour worked) than the average of the Euro Zone (19), European Union (28), and the OECD (see Figure 85).

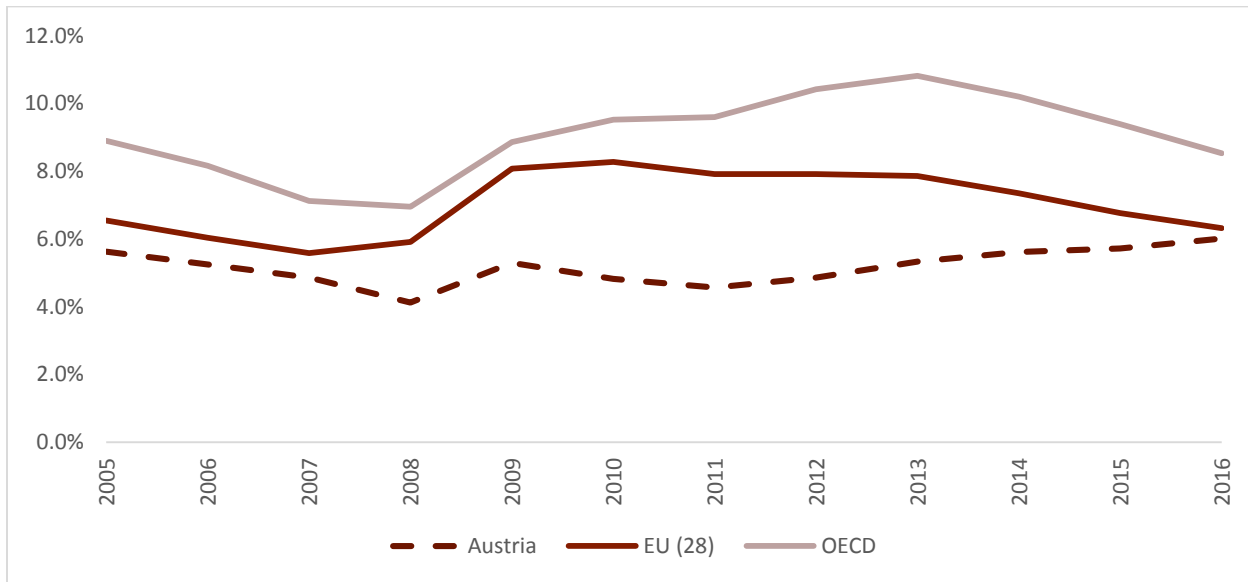
Figure 85: GDP per capita in Austria, EU and OECD (2000-2016)



Source: (224)

In regard to employment, historically (i.e. between 2005 and 2014), Austria's unemployment level has fallen below both the OECD and EU. However, since 2014, unemployment in Austria, unlike international trends, has been increasing (see Figure 86).

Figure 86: Unemployment rate for Austria, EU and OECD (2005-2016)



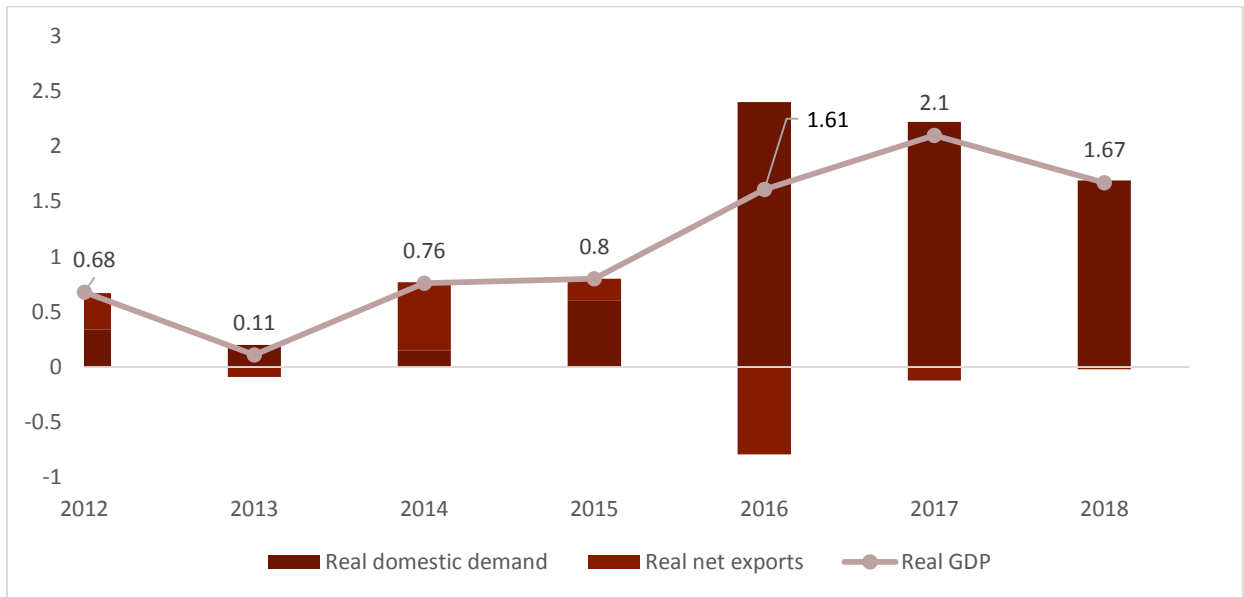
Source: (225)

5.5.2 Future economic performance and challenges facing social health insurance

Economic forecasts

According to the Austrian Institute of Economic Research (WIFO) and the OECD, Austria's economic outlook looks strong (226,227). In the short-term, the Austrian economy is expected to grow by 2% and 1.8% (real terms) in years 2017 and 2018, respectively (226). From 2018-2021, the growth rate is predicted to decline marginally to 1.5% in real terms, or 1.7% in actual terms (226). The relatively high level of economic growth will stem from strong domestic demand, caused by the 2015-16 tax reform, which boosted disposable income levels (see figure below) (227).

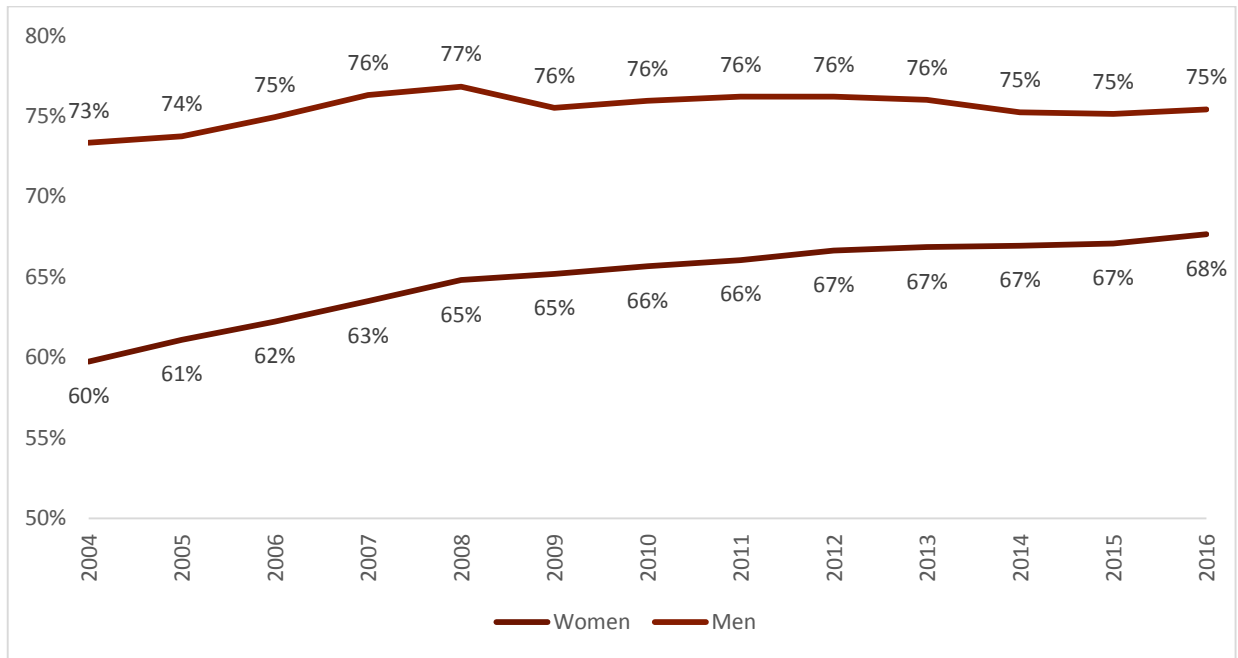
Figure 87: Change in real GDP growth, historical and projected (2012-2018)



Source: (227)

In terms of the labour market, levels of employment will continue to rise as a result of immigration, an increase in the actual retirement age and higher participation by women in the workforce, which, as of 2016, was 7 percentage points below that of men (an improvement from the 13-percentage point difference in 2004). Strong projected economic growth will likely absorb changes to the labour market, as a result, unemployment should stabilise at approximately 6% (see Figure 89).

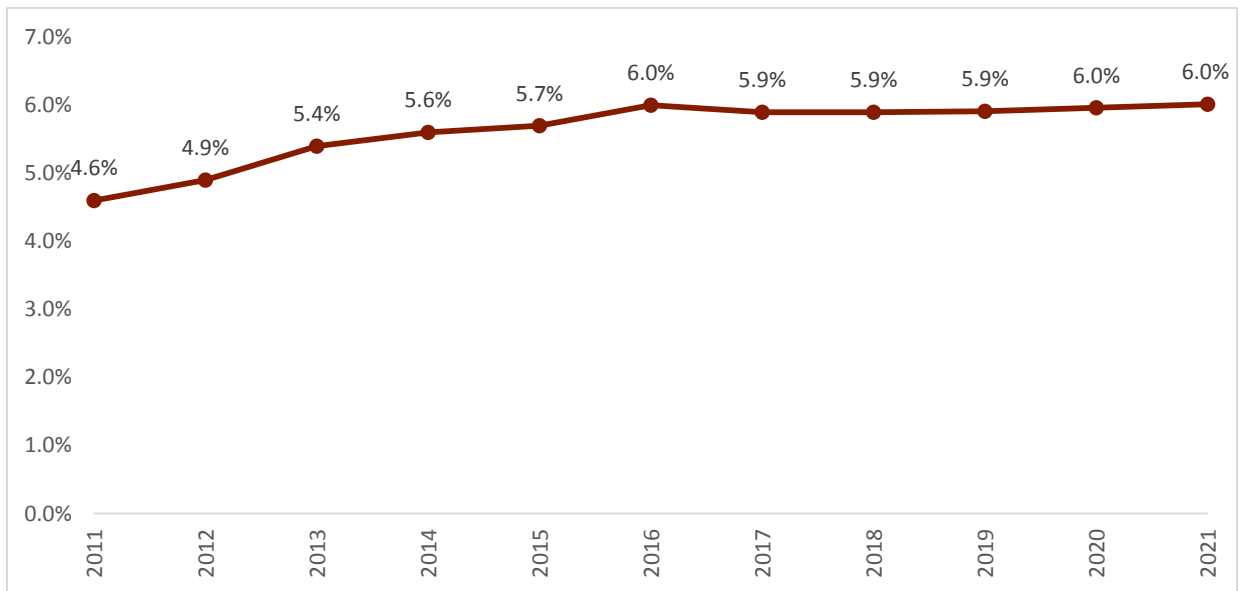
Figure 88: Participation rate by gender for working age population* (2004-2016)



Source: Data provided by the Ministry of Labour, Social Affairs and Consumer Protection.

Note: *Those aged 15-64 years.

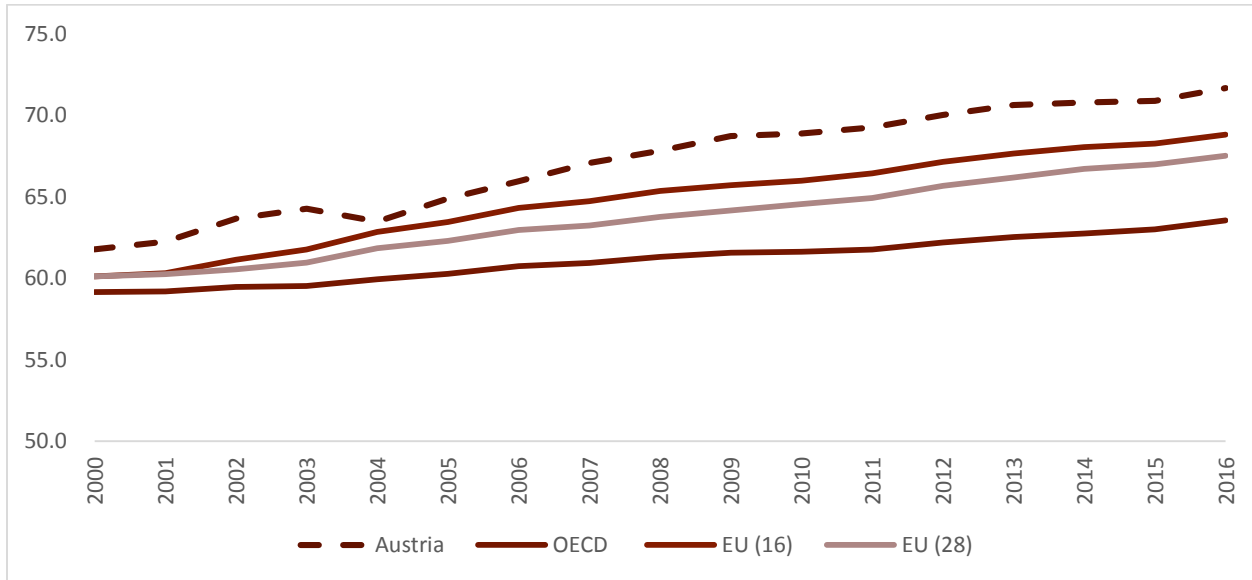
Figure 89: Unemployment rate, historical and future projections (2011-2021)



Source: Medium - term forecast of WIFO March 2017 (provided by the Ministry of Labour, Social Affairs and Consumer Protections)

Although Austria’s female participation rate is lower than men, when compared to other developed countries, Austria performs strongly in this regard. For example, since 2000, the female participation rate in Austria has outperformed countries within the OECD, Eurozone and EU (see Figure 90).

Figure 90: Female participation rate with Austria, Eurozone (16), EU (28), and OECD (2000-16)

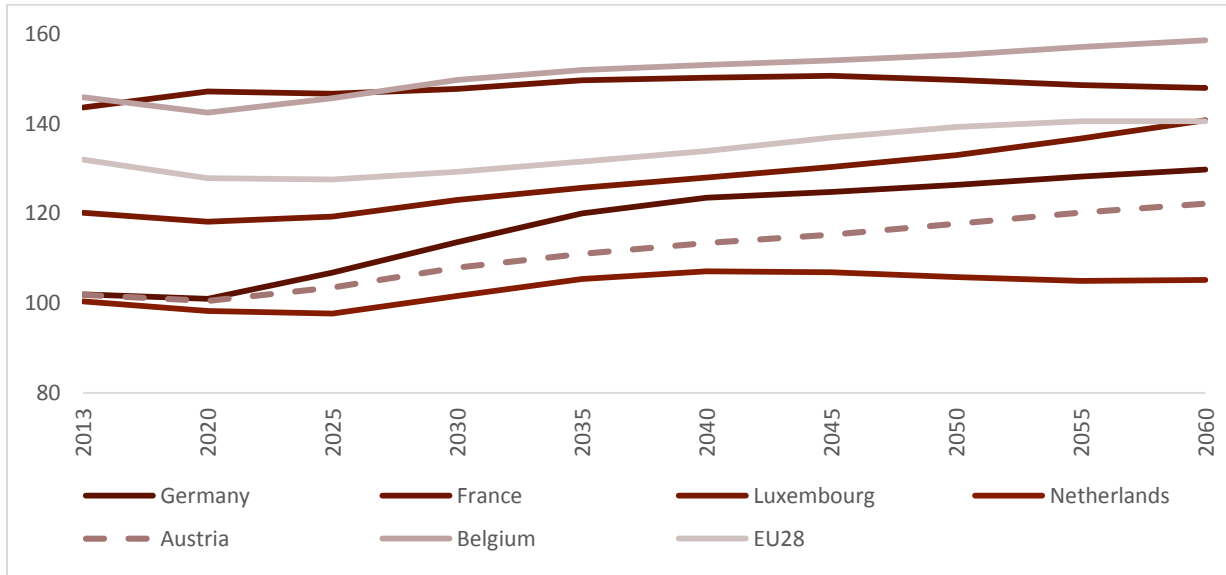


Source: (228)

Despite positive economic projections, future challenges impacting social health insurance finances need to be considered. In particular, Austria’s population is ageing, meaning the proportion of the working age population will decline, while simultaneously those in retirement will rise. This will negatively impact the financial capacity of health insurers as contribution revenue will decrease, while the number of health services accessed will increase (given older people access healthcare services more frequently). For example, the *EU-Commission Ageing Report (2015)* estimated that the total economic dependency ratio⁵⁸ for Austria will increase from 101.9 in 2013 to 122.2 in 2060 (see Figure 91) (229).

⁵⁸ Ratio of dependent people, both young aged below 20 and elderly aged 65 or above, relative to the working-age population (20-64))

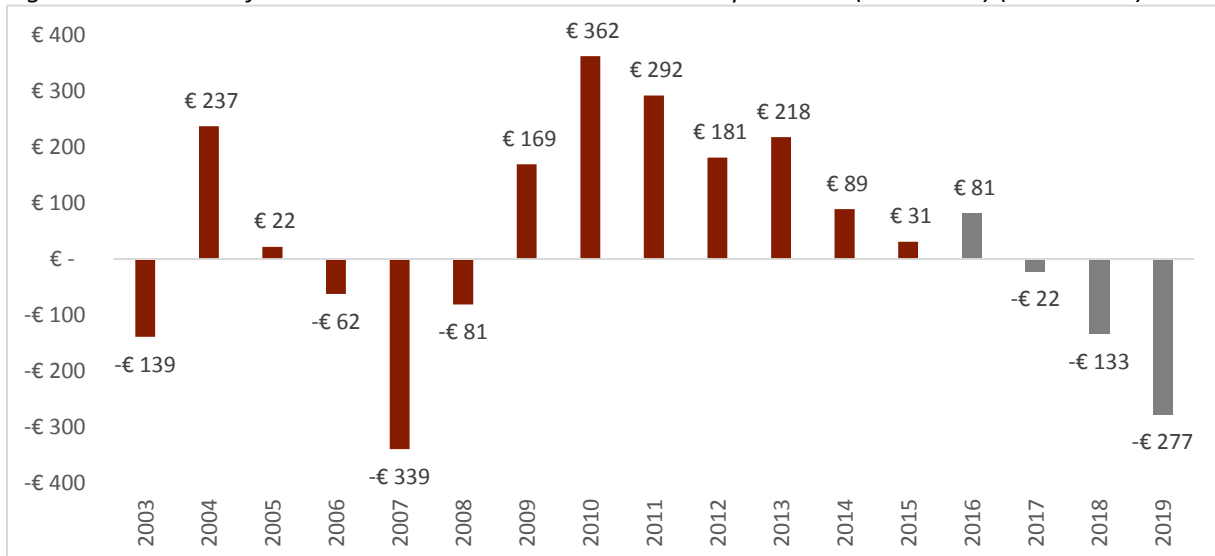
Figure 91: Total economic dependency ratio projections for Austria (2020-2060)



Source: (229)

Taking into account demographic and economic predictions, changes to social health insurance contribution revenue have been estimated. For example, the HVSV (2017) forecasted the balance of social health insurance revenues and expenditures up until 2019. Results from their research reveal that from 2017 onwards, social health insurance, on average, will operate in deficit, which in 2019 will amount to €277 million.

Figure 92: Balance of social health insurance revenues and expenditure (in millions) (2003-2019)



Source: Main Association of Austrian Social Security Institutions. IHS. 2017.

Note: Red columns = actual figures, Grey columns = projected figures.

Future labour market challenges

In addition to an ageing population, social health insurers will face challenges arising from changes to the labour market, namely digitalisation, self-employment, and most importantly, the sophistication and proliferation of artificial intelligence (AI) (see Table 60) (230–232).

Table 60: Labour market challenges facing social insurance systems

Challenge	Description	Challenge to financing
Digitilisation	Advances in technology have increased the size of the online economy.	Three main tax challenges caused from digitalisation are: lack of physical presence in a country, valuing personal data, and characterising payments.
Self-employment	The digital economy has led to an increase in the number of non-standard workers, including those who are self-employed.	Tax avoidance.
AI and automation	Advances in AI and automation are increasingly rendering certain forms of human capital obsolete.	Potential for mass unemployment leading to lower tax revenues.

Source: See descriptions below.

Digitalisation

The proliferation of the Internet across all age groups and economies has led to significant growth in the online marketplace (233). As outlined by a recent OECD report (2016), internet companies are no longer dominated by service providers, or soft- or hard-ware companies, but rather platform operators (e.g. Apple, Google, Facebook and Airbnb) (233).

The proportion of the population who engage with online platforms is significant and continues to grow. A recent study found that 17% of Europeans use services within a collaborative online platform (e.g. Uber, Airbnb), of these people, just under a third (32%) provide the service (234,235). A recent report (2016)

estimated the size of the European collaborative digital economy at €4 billion in terms of revenue in 2015, which generated €28 billion worth of transactions (236).

The digital economy offers consumers better, smarter products and services, and therefore plays a significant role in economic growth (237). However, it also represents a key challenge for governments in terms of tax collection. The OECD has categorised these tax challenges into the following three categories:

1. **Nexus:** Unlike traditional ‘brick and mortar’ businesses, digital businesses are highly mobile, therefore digital companies often operate in countries without a physical or legal presence.
2. **Data:** Personal data is highly profitable for digital companies such as Google and Facebook, who use it for advertising purposes. A key challenge is how to attribute value to this data and how to classify it for tax purposes.
3. **Characterisation:** It has become increasingly difficult to characterise payments in new digital business models, given there is no intermediary (238,239).

Other indirect tax challenges resulting from digitisation involve VAT in terms of cross-border trades in good, services and intangibles (i.e. results in minimal to no levels of VAT being applied) (239).

Governments across the OECD recognise the important challenge digitisation represents to their economies. In response, the OECD has created a Task Force on the Digital Economy (TFDE) which evaluated several policy options to address tax challenges posed by digitalisation. The TFDE concluded that exceptions to permanent establishment (PE) should be modified so that core activities performed by a company in a specific country are taxed accordingly. Secondly, they recommend that countries apply international VAT/GST guidelines, which outline global standards on the allocation of VAT/GST taxing rights on cross-border transactions (239). An overview of policy options explored by the TFDE, including those outlined above, are provided in Figure 93.

Figure 93: Policy options to tackle tax challenges caused by the digital economy

The OECD TFDE analysed several policy options to tackle the tax challenges caused by the digital economy. The options included:

- **Changes to the exceptions of Permanent Establishment (PE) status, that is, whether preparatory of auxiliary activities should remain exempt***
- Alternative to the current PE threshold

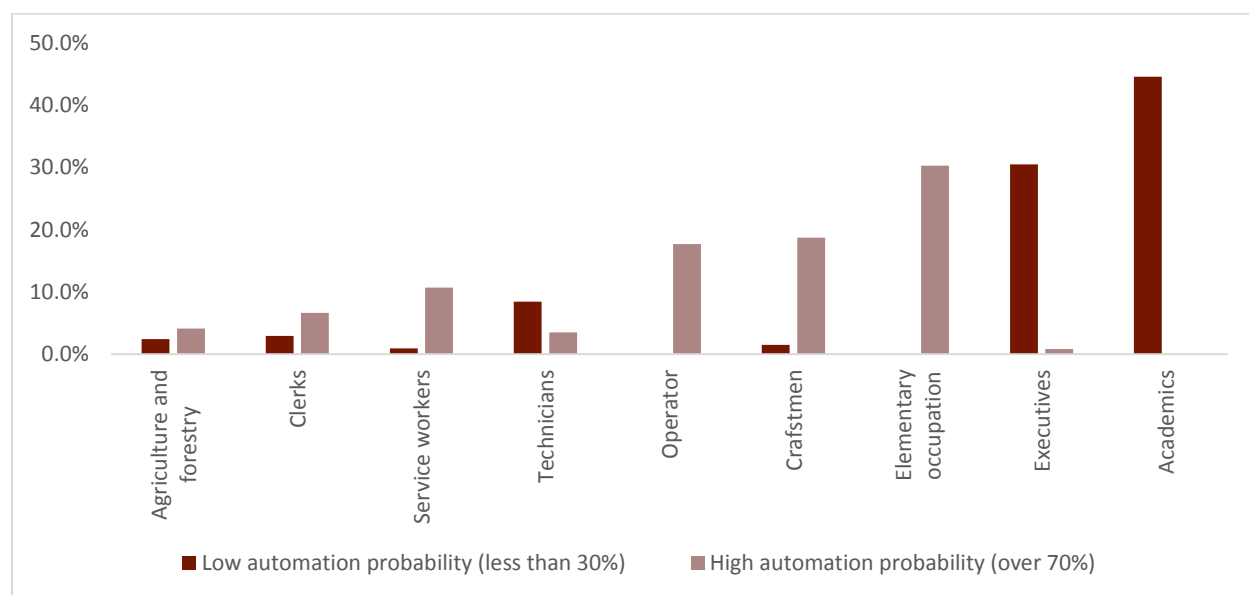
- Introduction of a withholding tax on payments by country residents for goods and services purchased online from non-resident providers
- Introduction of an equalisation levy to ensure equal treatment between foreign and domestic suppliers (essentially it is a way to tax non-resident companies who have significant economic presence in a country)
- Collection of VAT on imports of low-valued goods
- **Collection of VAT on cross-border business-to-consume supplies of services and intangibles***

Source: (239)

Note: *Dot points which are bolded reflect policies that were eventually supported by the TFDE. The remaining policies were not supported.

As in all countries, automation probability differs significantly across professions. A recent report by Nagl *et al.* (2017), examined automation probability across nine professions in Austria. Their findings show that across the professions, low automation probability ranges from 0% to 44.6%, and between 0% and 30.3% for high automation probability (see the figure below) (240). Further, Austria has recently introduced a digitalisation strategy called ‘School 4.0’, which includes training to enhance IT competencies amongst school-aged children.

Figure 94: Low and high automation probability by profession (Austria)



Source: (240)

Self-employment

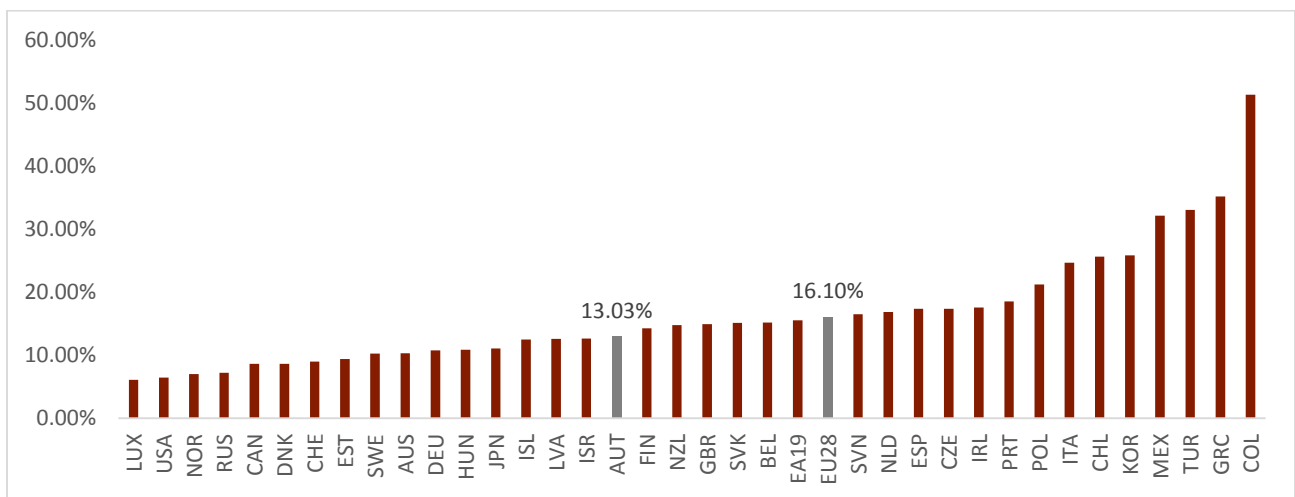
The digital economy has led to a growth in non-standard work (NSW), which is defined by what it is not: 'full-time dependent employment with a contract of indefinite duration' (233). NSW is often irregular (e.g. part-time or temporary) and the individual is often self-employed.

Self-employment is challenging the traditional labour market, particularly within occupations such as management, technicians and associate professionals (see figures below) (241). Workers who classify themselves as self-employed are more likely to work multiple jobs, have numerous income sources, and in many cases, can work from anywhere in the world. Despite drastic changes to the labour market, standard working hours, minimum wages, insurance, taxes and benefits have remained unchanged or have only been marginally adapted (241).

Self-employment is often viewed positively as it allows workers greater flexibility, requires entrepreneurship and innovative ideas thus boosting overall economic growth. On the other hand, it can be seen as exploitative as many workers are not awarded basic employment rights, and are more exposed to financial insecurity (242).

In terms of public financing, self-employment represents a challenge to governments as it is associated with lower tax rates, lower incomes and higher rates of tax evasion (242). In Austria, for example, there is an increasing number of 'bogus' self-employed individuals who do so to avoid tax or social security contributions (243).

Figure 95: Self-employment as a % of total employment for a selection of countries (2015)



Source: (244)

AI and automation

The developed world is facing a new industrial revolution caused by advances in AI which make certain forms of manual routine labour increasingly obsolete (e.g. bank tellers, cashiers, car assembly) (230,231). To date, job losses caused by automation have largely been felt by the middle-class and those with lower levels of education, thus widening the income equality gap (245). For example, the OECD (2016) estimate that 40% of workers who have a lower secondary education degree are employed in jobs with a risk of automation, compared to 5% for those with a tertiary degree or above (241). However, development in AI will increasingly place highly-skilled jobs under risk. Prominent examples already present within the economy are outlined below:

- Law firms are turning to E-Discovery software to sift through large volumes of documents, which is replacing the work undertaken by human clerks or paralegals
- Enlitic has developed deep learning technology to assist healthcare providers in clinical decision making (e.g. Enlitic software can compare multiple lung CT scans to identify blood vessels, harmless imaging artefacts or malignant lung nodules) (246).

For decades' economists have predicted rising rates of unemployment caused by advances in technology. The debate continues today with a number of researchers predicting growing unemployment attributable to the rise in computer controlled equipment (see Figure 96). For example, the OECD have predicted that AI will lead to a loss of 5.1 million jobs across numerous countries between 2015 and 2020. At a country-specific level, researchers within the US have estimated that each additional robot will replace between 180 to 340 workers.

Figure 96: Impact of automation on unemployment: Brief review of recent research papers and policy reports

Frey & Osborne (2017). *The future of employment: How susceptible are jobs to computerization.*

- The authors looked at 702 occupations in the US and estimated that over the next two decades, 47% of workers in the country could be automated.

Acemoglu & Restrepo (2017). *Robots and jobs: Evidence from US Labor Markets.*

- Research showed that one additional robot per 1,000 workers is associated with a reduction in the employment to population ratio by 0.18-0.34 percentage points (i.e. one additional robot could replace 180 to 340 workers).

OECD. (2016). *Automation and independent work in a digital economy.*

- Based on results from the Survey on Adult Skills, 9% of jobs across the OECD are at high-risk of being automated*
- For a further 25% of jobs, it is expected that 50% of their tasks will change significantly due to automation.

World Economic Forum. (2016). *The Future of Jobs.*

- Predicted that between 2015-2020 there would be a total of 7,165,000 job losses across 20** different countries due to automation and AI, largely in office and administration, and manufacturing and production.
- Over the same period, AI and automation is expected to create an additional 2,021,000 jobs within the areas such as business and financial operation, and management.
- Net impact of 5,144,000 job losses between 2015 and 2020. However, the combined population of all countries used in the study is well over 2 billion, therefore 5.1 million jobs could be considered relatively small.

Source: (230–232,241,247)

Note: *OECD figures are markedly below that of other studies given their methodological approach. Specifically, the OECD report looks at task content of individual jobs in each occupation, as opposed to occupations as a whole. ** Australia, Brazil, China, France, Germany, the Gulf Cooperation Council (GCC), India, Italy, Japan, Mexico, South Africa, Turkey, the United Kingdom and the United States.

The impact of AI on employment should not thwart its development given technological developments lead to significant improvements in everyday lives. Further, other industries may 'soak up' workers who have been made redundant in highly-automated industries (e.g. demand for labour in the health and long-term care sector which will continue to grow as people get older and sicker). Lastly, productivity gains may in fact expand employment opportunities within affected areas thus boosting overall employment (230). For example, one study found that for each job created in a high-tech industry, an additional five complementary jobs are also added (see the figure below for an overview of the impact of AI and automation on the economy) (241).

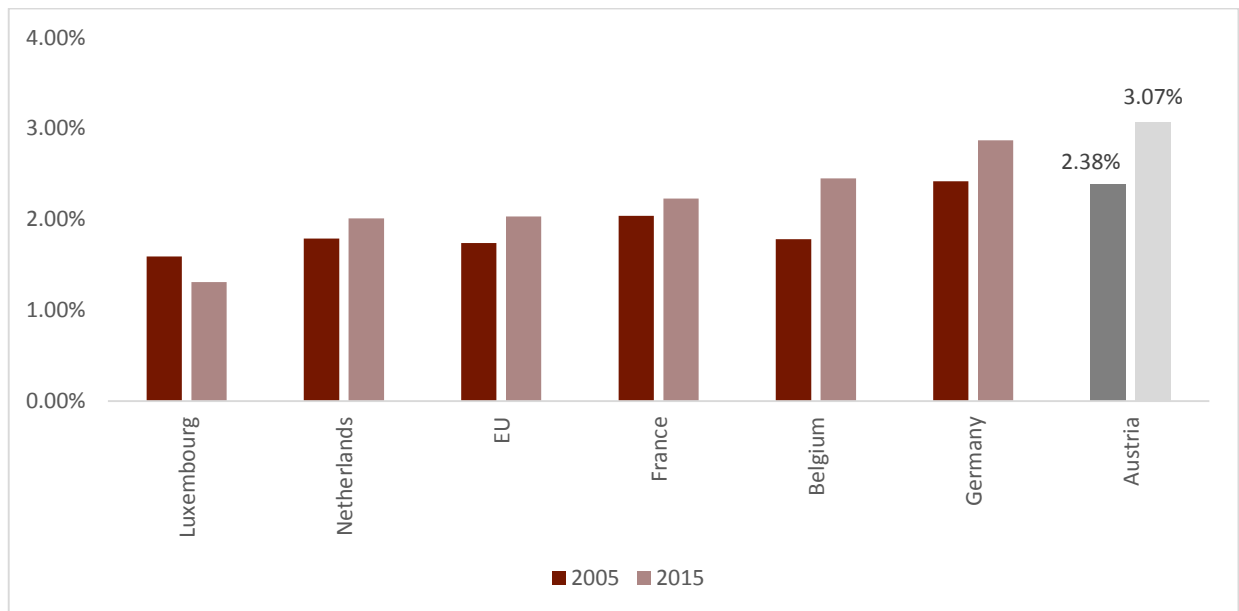
Figure 97: Impact of artificial intelligence and automation



- Improved quality of life
- Productivity gains
- Creation of new jobs
- Workforce displacement
- Unemployment
- Income inequality

Although automation and AI is unlikely to lead to high levels of unemployment, and in certain cases, may increase overall employment, governments still need to act swiftly to fully capitalise on the benefits of technological advances, and to avoid short-term employment displacement. Policies within Austria are already showing promise in terms of adapting to changing labour markets. For example, relative to other European countries, Austria spends a relatively high amount on R&D, most of which stems from the private sector (see Figure 98) (248).

Figure 98: R&D expenditure as a % GDP for a selection of EU countries (2005 and 2015)



Source: (248)

5.5.3 Current international policy responses

Social insurance systems, in the past, have relied upon a mix of policy options to broaden the social welfare base. Typically, governments rely on changes to taxation policy to raise healthcare funds, for example, through the introduction of new taxes, or via changes to the taxation base. Examples of prominent taxation policies targeted at widening the financial welfare based are outlined in this section and include changes to the French taxation base, earmarked health taxes and the Financial Transactions Tax.

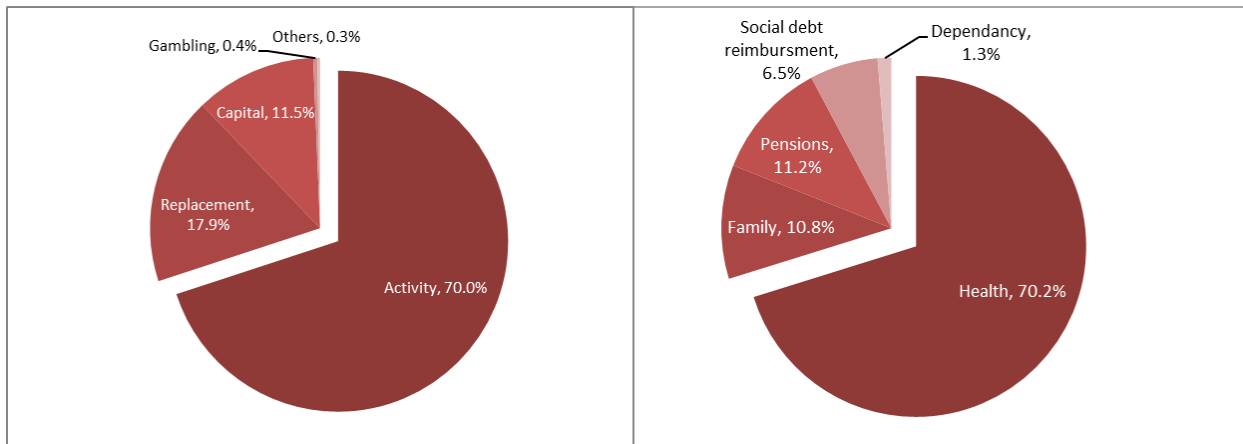
Changes to the French taxation base

During the 1990s, France was faced with slow economic growth and high rates of unemployment. Consequently, the country experienced high budget deficits, which were largely attributed to the healthcare sector. In an effort to improve the sustainability of the healthcare system, in 1995, the then President called for reform within the social insurance system, including ways to widen the revenue base (249,250).

In 1997, the French Government proposed a bill on social security funding, outlining a significant increase in the general social contribution tax (contribution sociale généralisée (CSG)) (i.e. from 3.4% to 7.5% (5.3% earmarked for health)), along with a simultaneous reduction in employee sickness insurance contributions (5.5% to 0.75%) (249,250).

By increasing the CSG, the French Government increased the social welfare base given, unlike sickness contributions, the CSG also takes into account income derived from unemployment and disability benefits, gambling, pensions and financial assets (see figure below for a breakdown of CSG funds). Today, 70.2% of CSG funds are allocated to the country's healthcare sector(249,250).

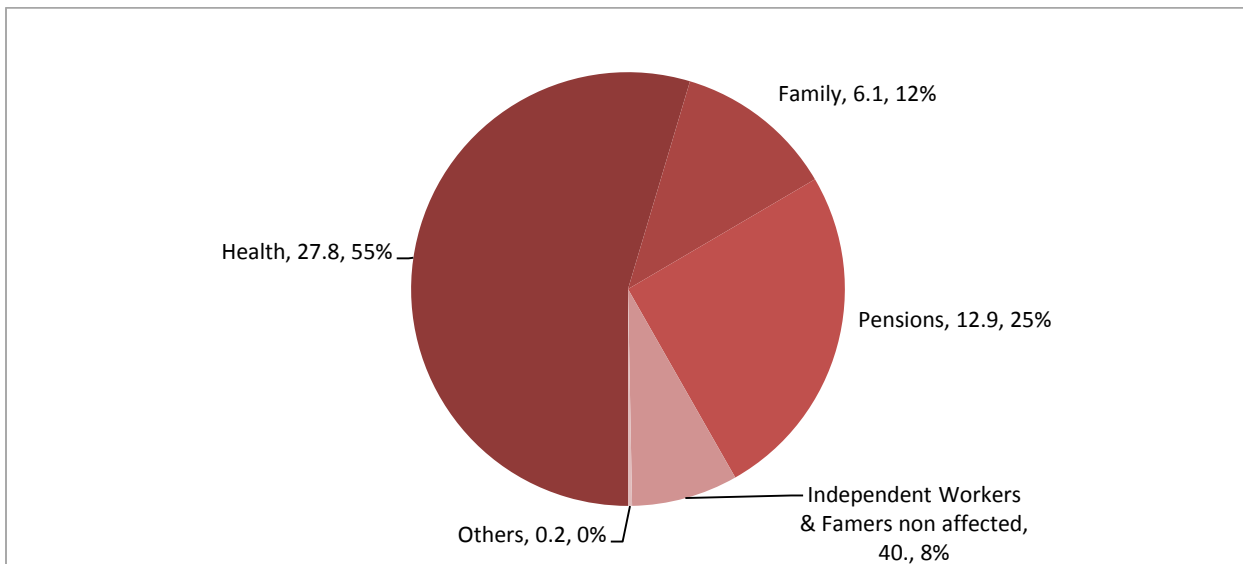
Figure 99: Origins and allocation of CSG revenues (2012)



Source: (250)

The CSG represents the government’s greatest effort to diversify funds for healthcare. Over the past 10 years, the government has generated a ‘third pillar’ of revenue for social security through the form of additional taxes (Impôts et Taxes Affectés), which includes over 20 types of earmarked taxes. In 2012, these taxes raised €51 billion, with just over half (55%) of these funds being dedicated to health (249,250).

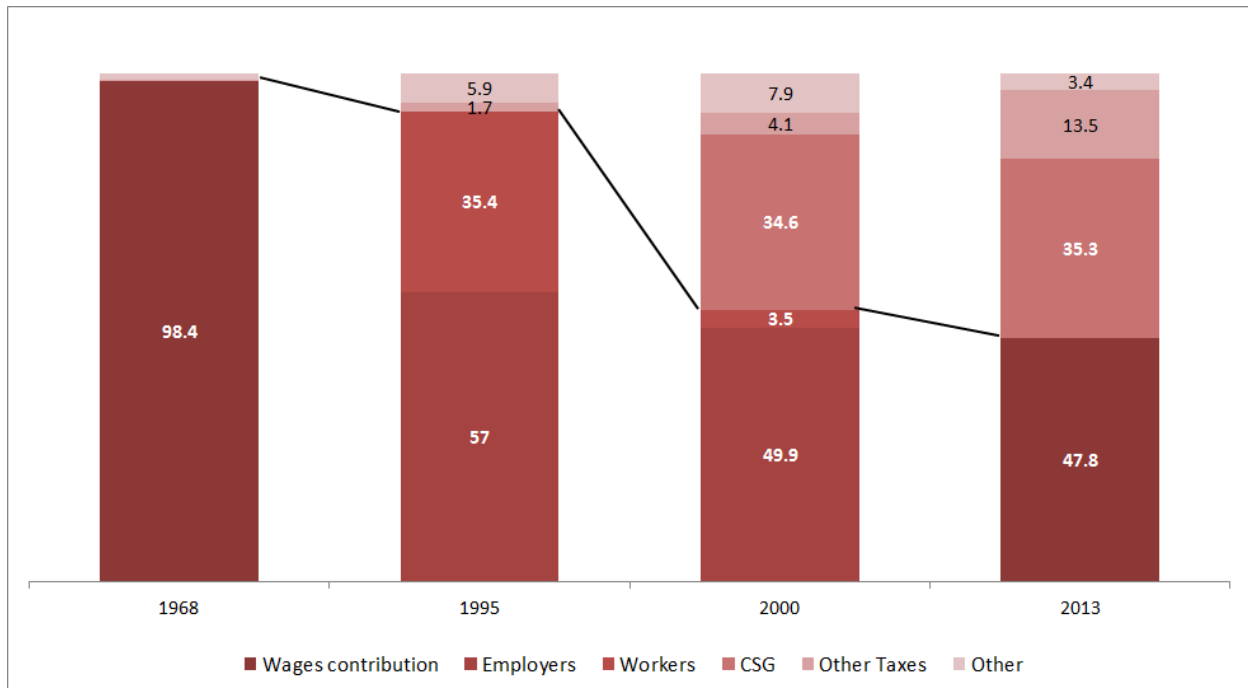
Figure 100: Distribution of earmarked taxes for social security (% and billion EUR) (2012)



Source: (250)

A timeline demonstrating the source of funds for social security in France has been provided in Figure 101. The figure shows that France has made significant progress in diversifying the financial base for healthcare, and is therefore less reliant on the labour market.

Figure 101: Distribution of CNAMTS resources (1968-2013)



Source: (250)

It is important to note that various exemptions within the CSG, most prominently the ‘Livret A’, where interest from savings (up to €15,000) are exempted from the CSG (and also from income tax) (covers 75% of French households). The same exemptions also apply to: Livret Juene (savings accounts for people aged 12-25) (15% of households), Livret de Développement Durable (savings accounts for sustainable development) (37% of households), and Livret d’épargne Populaire (popular savings accounts) (20% of households).

Earmarked ‘sin’ taxes

In response to rising rates of obesity, tobacco and alcohol consumptions, a number of countries have introduced ‘sin taxes’ on items that are deemed unhealthy (251). In many cases, these taxes are earmarked with all or a portion of revenue being used to fund areas within healthcare, such as health prevention and promotion, and health insurance (252). Thus, the objective of earmarked sin taxes is two-fold: firstly, to discourage unhealthy consumption, which may reduce future demand for healthcare, and secondly, to raise revenue for underfunded areas within the healthcare sector (252).

Several countries in America, Europe and Asia have implemented one or several forms of sin taxes in recent years. For example:

- The UK announced the introduction of a sugar tax within the Government’s 2016 budget. The tax is expected to raise £400 million a year.
- Denmark introduced a levy of €2.41 per kilogram of saturated fat used in a food product (2011). This policy was not considered successful and subsequently abandoned in 2012.
- As of 2017, France’s tax on sweetened drinks totaled €7.53 per hectolitre (i.e. 100 litres). In 2016, the tax raised €313 million. Further, taxes on tobacco and alcohol account for around €8 billion and €1 billion in revenue each year, respectively.
- Several US states have sugar drink taxes in place, a 2009 report estimated that a national tax of 1 cent per ounce on sugar-sweetened beverages would generate US\$14.9 billion annually (250).

By linking additional tax revenue to specific health projects, public support is more likely, which may outweigh industry opposition (251).

Italy’s IRAP (imposta regional sulle attività)

Tax in Italy is collected at the federal, regional and local level. At the regional level, governments tax companies, including foreign companies with branches in Italy, on their productive activities (i.e. the imposta regional sulle attività (IRAP)). The IRAP is generally set at 3.9%, however, for banks and financial entities, and insurance corporations this rate is higher at 4.2% and 5.9%, respectively (253,254). The IRAP represents one of the primary forms of funding for Italy’s National Health System (i.e. 35% of total financing) (254). Key features of the IRAP are outlined in Figure 102.

Figure 102: Italy’s imposta regional sulle attività (IRAP)

- | |
|---|
| <ul style="list-style-type: none"> • IRAP is an earmarked corporate tax levied on the net added value of production • The IRAP is applied at the regional level by resident companies and by foreign companies with permanent establishment (PE) status • IRAP is not levied on foreign income • IRAP is pooled at the national level, and later allocated back to the regions • Each region has the flexibility to increase or decrease the IRAP by 0.92%, meaning that different levels of IRAP tax are applied across the country |
|---|

Source: (253,254)

Financial Transactions Tax

The Financial Transactions Tax (FTT) has been proposed as a uniform tax on share, bond and currency transactions. The objective of the tax is to increase contributions from the financial sector to widen the revenue base. The original suggested tax rate was 0.5%, however, economists suggest a figure ranging between 0.1-1% (255–257).

FTTs are designed to increased funds for governments to offer greater stability within the economy. On the other hand, such a tax may lead to a reduction in financial transaction, leading to job losses in the financial sector. Further, banks are likely to pass on the costs to consumers, therefore lowering returns for pensioners and those with savings (255–257).

Several Asian countries have implemented an FTT including Hong Kong, India (Mumbai), South Korea (Seoul), and Taiwan (Taipei). In Europe, in 2011, the European Commission proposed a FTT for the entire EU. By 2012, a unanimous agreement on the tax could not be reached, however, several member states were keen to go ahead with implementing an FTT. To date, an FTT in Europe has not been introduced (255–257).

5.5.4 Policy options: Broadening the social welfare base

Based on international experiences and new challenges facing labour markets across the world, including Austria, a number of policy options have been developed to broaden the country's social welfare base. These have been grouped into the following policy categories: taxation, education and skills, retirement, and workforce participation.

*Education and skills*⁵⁹

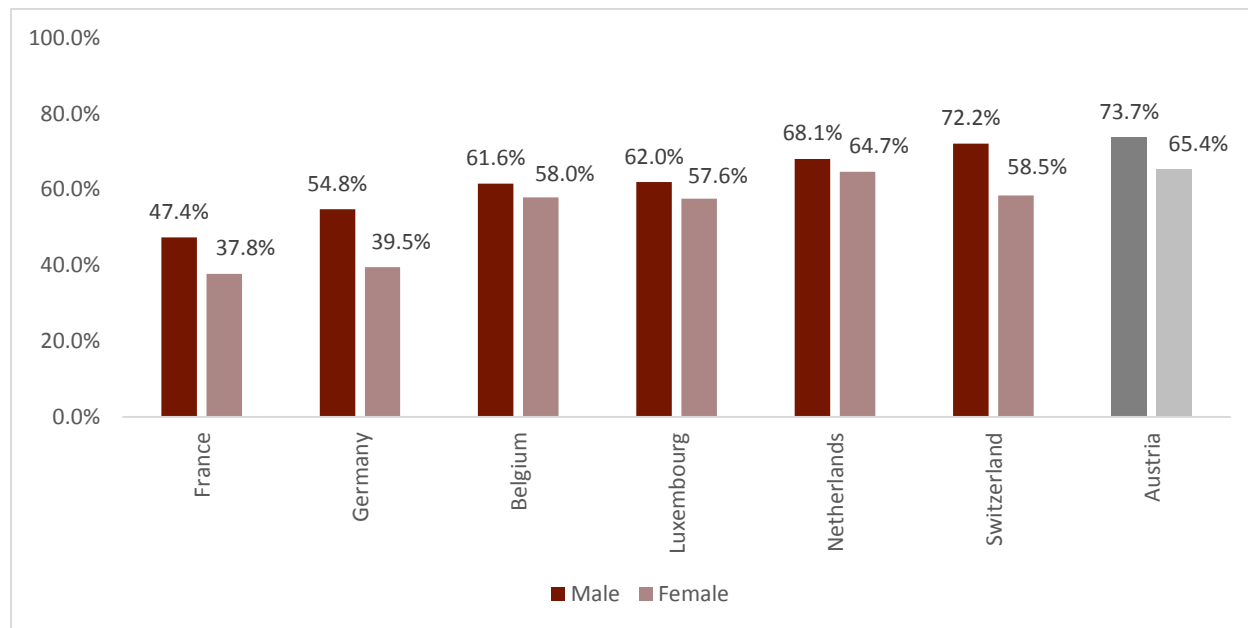
Education systems

It is advised that governments and industry leaders fully cooperate to ensure that academic institutions teach students skills that meet future demands. This may entail increased investment in vocational training, and programs which promote re-training and lifelong learning (as described in further detail below). It is important to note that Austria already performs well in this area, with a relatively high

⁵⁹ These policies have been based on options derived by the World Economic Forum (2016) and the US Government (247,258).

proportion of students within upper secondary education engaged in vocational education and training (see Figure 103).

Figure 103: Share of upper-secondary students in vocational programs (2014)



Source: (259)

Lifelong learning

People are living and working longer today than in the past. Longer lives partnered with a rapidly changing economy mean that an increasing number of older people find themselves out of work and without the relevant skills to fill upcoming positions. The Austrian Government could enhance its effort to collaborate with business to encourage ongoing retraining and upskilling to ensure employee skills set are up to date. The Government may also offer tax breaks or other financial incentives to businesses on expenditure related to retraining/upskilling.

Such initiatives have already been undertaken in this area. For example, in January 2017, the Austrian Government created an additional 30,000 training positions. Of these positions, half are dedicated to young professionals (i.e. under the age of 25), with the remaining half falling under the ‘Second chance in the Labour Market’ concept. For example, under this concept, 6,500 positions are awarded to those who wish to re-orientate their career.

Further education

Automation and AI will reduce demand for highly-routine manual labour. The focus should therefore be on providing the younger population with higher education which will allow them to transition into jobs requiring strong cognitive skills.

Governments could assist this process by offering incentives for individuals wishing to seek higher education. Governments could also run education campaigns during high-school years to encourage children to go on to further education.

Legal considerations

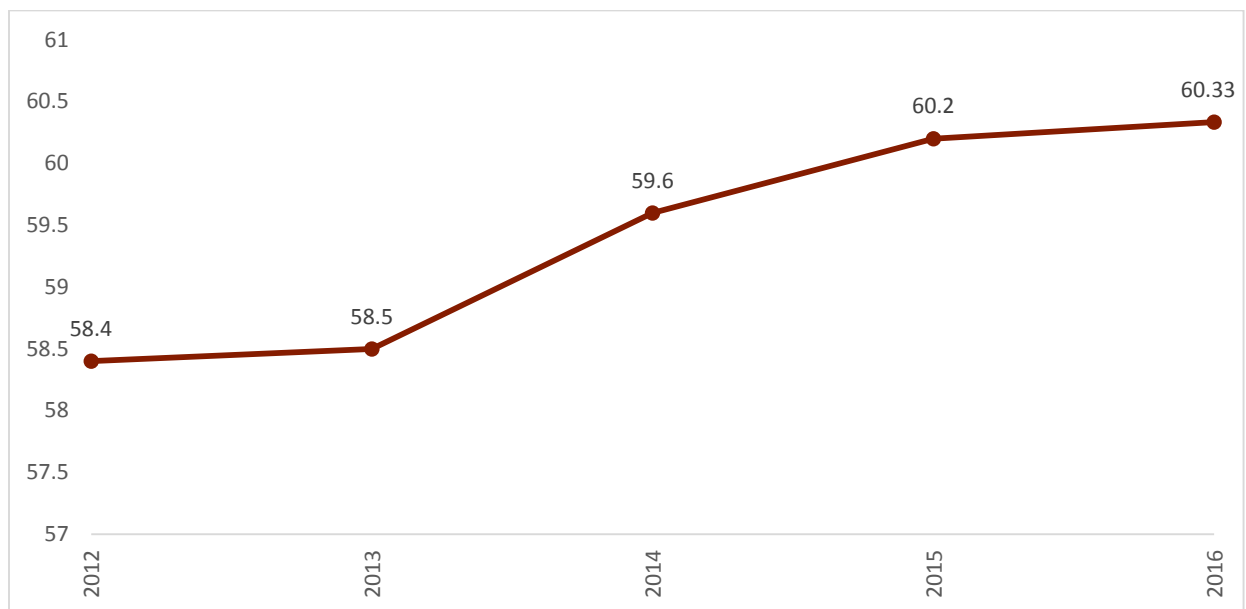
No particular legal impediments exist for the above policy options.

Retirement policies

The legal retirement age in Austria is 65 years for men and 60 years for women, with an expectation that the latter figure will converge to the male age by 2033 (260).⁶⁰ Despite the legal retirement age being set between 60-65 years, the actual retirement age in Austria is approximately 60 years. To address this issue, the Ministry of Labour, Social Affairs and Consumer Protection have put in place several pension reform measures, which have already seen positive returns (for example, abolishment of early retirement options). Specifically, between 2012 and 2016, the real retirement age increased from 58.4 to 60.33 (see Figure 104) (8,261).

⁶⁰ There are provisions in place for early retirement. Specifically, men can retire at 62 years if they had been employed for 45 years, for women, an equivalent policy has been suspended until their legal retirement age has been harmonised.

Figure 104: Trend in the real retirement age (2012-16)



Source: Data provided by the Ministry of Labour, Social Affairs and Consumer Protection

It is recommended that the Ministry of Labour, Social Affairs and Consumer Protection continue its effort to raise the actual retirement age in coming years. Policy-makers should also continue their effort in the area of health prevention and promotion to avoid early retirement where possible.

Legal considerations

An increase of the actual retirement age is a salient issue in public discussion as well as for policymakers. The main legal impediment that has to be faced in this respect is the principle of 'Vertrauensschutz', meaning that all individuals may trust in a legal situation (especially if it is applicable already for a long-period of time) and, thus, are protected against intensive and/or sudden reductions. Therefore, 'smooth transition provisions' are required for any amendments aiming to increase retirement age.

Workforce participation

The participation rate of women aged 15-64 years is significantly below that of men at 68%. Although this figure represents a significant increase from 60% in 2004, additional policies to encourage women to enter or re-enter the workforce should be implemented. For example:

- Improve affordability and quality of child care
- Encourage businesses to offer flexible working time arrangements

- Encourage fathers to be more involvement in child-rearing responsibilities, for example, through changes to parental leave arrangements.

Increasing the number of women in the formal workforce will improve the financial strength of social health insurers, as well as reduce the need to increase taxes to fund healthcare.

Legal considerations

Even though a wide range of measures would be necessary for implementing these policy options, no particular legal impediments have to be faced in this respect.

Taxation policies

At present, 80% of revenue for social health insurers is sourced from employee/employer contributions. The reliance on contributions may be problematic given labour market volatility, which is expected to worsen given rising rates of self-employment, digitalisation, ageing of the population, and AI and automation. To address this challenge, social health insurers could:

- Alter the contribution base to consider total income, including income from benefits and properties, for example. If this approach is taken, the maximum income threshold should be upwardly revised to fully realise the financial benefits of widening the contribution base (explored further in the section regarding ‘collection of contributions’).
- Alter the contribution base stemming from employers, for example by taxing profits. However, caution should be taken when considering this approach as although it may lead to short-term gains, in the long-run, Austrian companies may be less competitive on a global scale and less likely to hire, thus reducing overall contributions (see Italy’s IRAP, Figure 102, for further details).
- Diversify revenue sources by increasing the level of earmarked health taxes, beyond the current tobacco tax (§ 447a Abs. 10 ASVG), which currently contributes to the Risk Equalisation Fund (2/3 of tax revenue) and the Health Prevention and Promotion Fund (1/3). For example, additional taxes could be levied on alcohol, and products with high levels of sugar and saturated fat. Before such taxes are introduced, it is important to clearly specify whether the main objective of the tax is to change health behaviours or raise revenue. If the former, the literature suggests that taxes should be set 20% or above (specifically, for sugar-sweetened beverages).

Legal considerations

Whilst increasing taxes dedicated to a specific health purpose would not cause particular legal impediments, widening of the basis for social insurance contributions by including income which is not gained from (self-)employment would lead to problems with respect to the fundamental concept of social insurance, which is closely linked to (self-)employment and, thus, to the income gained from that source. Moreover a problem with respect to the principle of self-governance has to be faced, too, as persons living on properties are not part of any 'Versichertengemeinschaft': So why should they pay contributions and why should (self-)employed persons share their risks with landlords etc? (for details see Volume 2 chapter 5.2.2.)

International studies

In addition to the policy options outlined above, it is advised that the Austrian Government keep up-to-date with research being undertaken in this area by international institutions, namely the OECD. For example, this year, the OECD have commissioned a *Future of Work* project to advise governments on how to address challenges caused by changes to the traditional labour workforce (see Figure 105).

Figure 105: OECD Future of Work project

The OECD initiative on the *Future of Work* will look at how demographic change, globalisation and technological progress are affecting the quantity and quality of jobs, as well as labour market inclusiveness, and what this means for the labour market, skills and social policy. As part of this project, the OECD will look at which schemes or models providing social protection to non-standard workers are already in place across the OECD, how well they work, and what implementation problems exist.

Summary of policy options for broadening the social welfare base

First and foremost, to ensure the financial sustainability of the social insurance, policy-makers should implement appropriate policies to improve efficiencies within the system. Only then should further efforts to widen the social welfare base be considered.

Within section 5.5.3, a description of the FTT was provided, however, it has not been included within our proposed policy options given there is disagreement about the policy's implementation across Europe.

Specifically, this option is not recommended given the adverse impact an FTT would likely have on financial markets if implemented by a single country.

It is advised that the government intensify its effort to prepare the labour market for changing industry demands. Specifically, by investing in relevant education programs that span across an individual's working life. By ensuring skills match demand, the possibility of rising unemployment as a result of AI and automation will be minimised. A continuation of policies to boost the actual retirement age and participation of women in the workforce is also highly recommended in the short-term.

Changes to the tax system, through a broadening of the contribution base, should only be considered if 'soft' measures (as outlined above) are unable to raise sufficient funds. This approach is recommended for various reasons. First, there is no political consensus or motivation to pursue this policy. Second, Austria already draws upon both direct and indirect taxes to subsidise healthcare. And thirdly, an increase in taxes is inconsistent with recent policies to reduce the overall tax burden for citizens.

Lastly, in regard to earmarked sin taxes, we advise that the Austrian Government commission a study to evaluate the impact such taxes have on changing individual behaviour and raising additional revenue. Based on findings from the review, the Government could consider extending sin taxes beyond the current tobacco tax (§ 447a Abs. 10 ASVG).

6 Contracts and purchasing

Chapter 6 relates to contracts and the purchasing of services within healthcare systems. The chapter is focused on the negotiation process between providers (i.e. physicians) and payers (i.e. health insurance), for example, by covering topics such as reimbursement and quality of care. Issues regarding IT and procurement of medicines (including expenditure) are also discussed.

6.1 Framework for primary and outpatient care

Policy-makers are increasingly interested in strengthening primary and outpatient care given its role in promoting coordinated, appropriate health services. Primary and outpatient care therefore plays a salient part in improving healthcare efficiency by minimising unnecessary, costly services delivered within an inpatient setting. A pivot towards primary and outpatient care is evident in Austria, where, in recent years, two primary healthcare units have been established, in addition to financial incentives for establishing group ambulatory care centres (further details provided in section 6.3.8).

Dimensions of primary and outpatient care can be broken down into 10 elements, which are further grouped into the following three indicators: structure, process and outcomes (262). Many of these dimensions are influenced by contractual negotiations, therefore the agreement reached between social health insurance and the Chamber of Physicians is of significant importance for improving primary and outpatient care.

Further details regarding contractual negotiations, including elements within the primary and outpatient care conceptual framework, are discussed in sections 6.2 and 6.3.

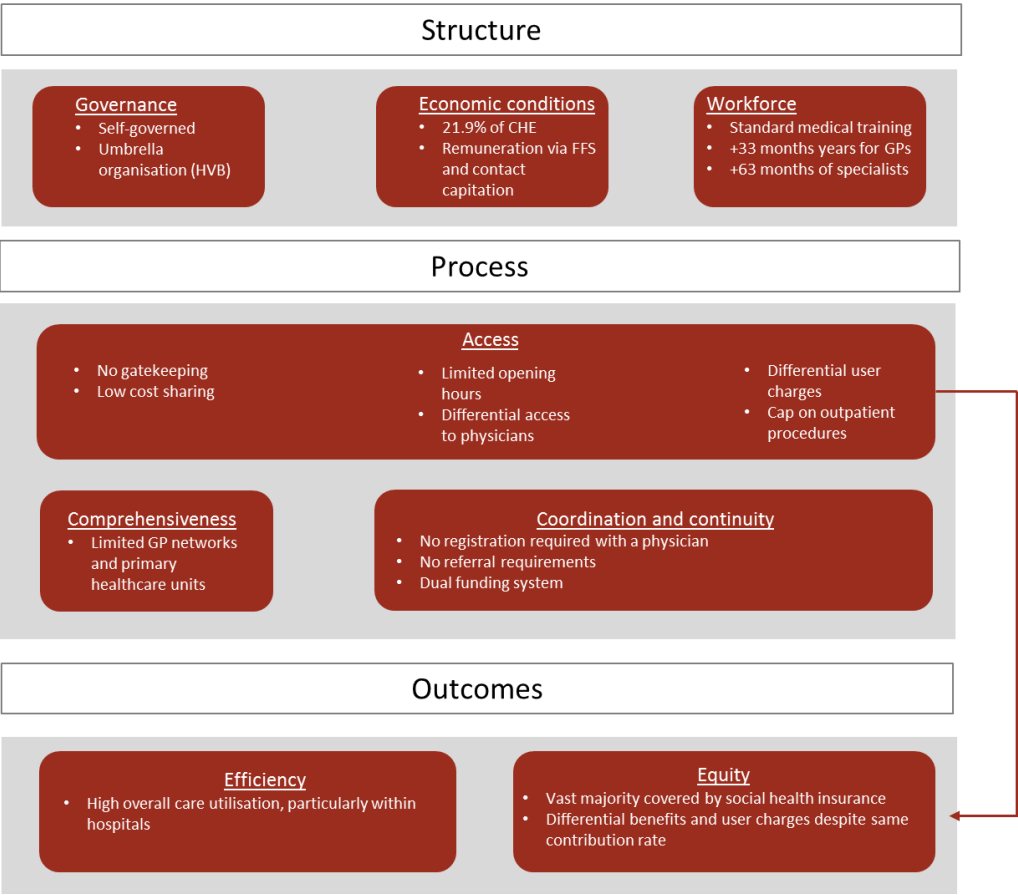
Table 61: Elements of primary and outpatient care

Group indicators	Element	Description
Structure	Governance	Vision, regulations
	Economic conditions	Expenditure, remuneration
	Workforce development	Training
Process	Access	Access to care, physicians and services

Group indicators	Element	Description
	Comprehensiveness	Breadth of services
	Coordination and continuity of care	Link between all levels of care
Outcomes	Efficiency	Cost-effective use of resources
	Equity	Systematic differences in healthcare access and outcomes

Source: Adapted from (262)

Figure 106: Conceptual framework for primary and outpatient care in Austria



Source: Adapted from (262)

6.1.1 Structure

Governance

Primary and outpatient specialist care operates within Austria's social insurance system. Social health insurers are self-governed institutions operating under various laws. Social insurance carriers must belong to the umbrella institution, the HVSV, which is responsible for the overall vision of social insurance. It is important to note that 15 KFAs, although by definition are a form of social insurance, do not operate under the HVSV.

Economic conditions

Ambulatory care accounts for 21.9% of current health expenditure in Austria, or €7.7 million. Of these funds, just under half (43%) are spent on services provided by physicians, followed by dentists (23%), and finally, other health practitioners, ambulatory healthcare centres, and home health care services (34%).

GPs and specialists who are contracted with a social health insurer are remunerated via a mix of FFS and contact capitated payments (see section 6.2 for further details). Non-contracted physicians, are paid directly by individuals, who are later partly reimbursed by their social health insurer (described further in section 6.2). According to Stigler *et al.* (2012), Austrian GPs, on average, earn between 33-50% of outpatient specialists income. This proportion indicates the relative inferior status of GPs within the healthcare system (263).

Workforce development

According to Hofmarcher (2013), those wanting to become a physician, of any sort, must first complete a degree in human medicines, which includes a minimum of 12 semesters of classes at a medical university (4). To become a specialist, individuals must complete an additional 63 months of postgraduate clinical training, and examinations. Post-graduate education for GPs, on the other hand, is limited to 33 months (4). Training during these three years primarily takes place within a hospital setting, however, six months is spent with a GP setting.

6.1.2 Process

Access

GPs do not have a formal gatekeeper role within the Austrian healthcare system, therefore patients are free to access any type of outpatient specialist and/or inpatient care. Access to healthcare is also facilitated by relatively low levels of cost-sharing, with most services being provided in-kind by social health insurers (263).

Opening hours for both GPs and specialists, as outlined within contractual agreements is low, which may force patients to access inpatient care, despite suffering from relatively minor conditions. For example, it is typical for the general contract to state that GPs be open for at least 20 hours. Actual opening hours are likely to be longer, however, this figure is unknown as it is not formally recorded.⁶¹ Actual working hours in other developed healthcare systems ranges from approximately 33-51 hours per week (264,265).⁶²

Access to GPs and specialists differs across social health insurers as carriers with greater financial means are able to offer more attractive contractual agreements, that is, higher tariffs. As a result, insurees with wealthier carriers have greater access to GPs and specialists.

In regard to outpatient specialists, criteria for developing where posts are located has not based on robust needs-based factors, which may have led to a shortage of specialists within certain areas. Regional Structural Plans for health (*Regionaler Strukturplan Gesundheit*) aim to coordinate care between the Land and social health insurance, however, the initiative's success, to date, has been limited. Further, in recent years, a cap on certain outpatient specialist procedures has been implemented (e.g. a cap on MRIs, where Austria performs a relatively high number of exams (see figure below), has been met with frustration). Caps, which may either apply to specialists or GPs, differ across contractual agreements. As an example, carriers may apply points to services, which are linked to reimbursement, with the value of each point declining after certain thresholds are reached within a specific time period (this may be applied at the aggregate level, or at a specific service level). An alternate method is to limit the number of procedures

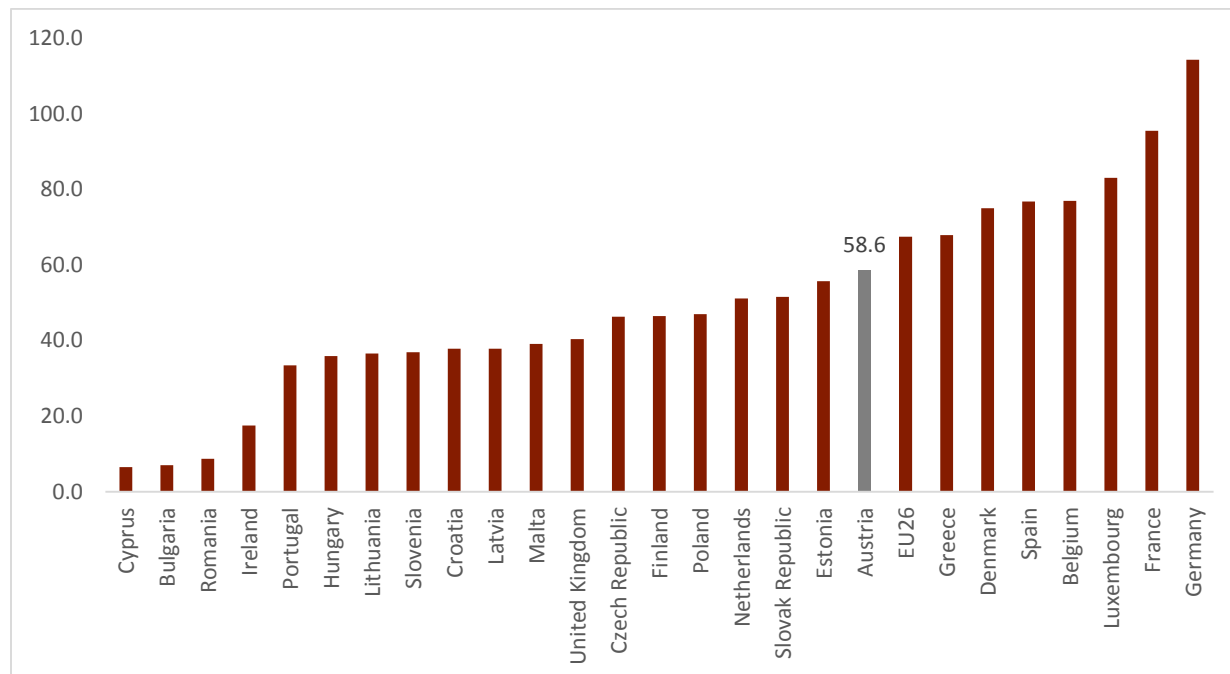
⁶¹ The HVSV are currently undertaking a project using a web crawler to determine opening hours amongst contracted GPs.

⁶² For example, Australian GPs, on average, work 33 hours per week, compared to 44 and 51 hours in the Netherlands and Belgium, respectively. These figures cannot be compared directly as findings were sourced from two surveys which used different methodologies (264,265).

physicians can perform over a specific period of time, after which no reimbursement is provided. Carriers may implement either or both forms of caps (266).

Implementing caps can be a positive move to reduce unnecessary care and contain costs. However, to ensure those in real need are not put at a disadvantage, they should be implemented alongside relevant guidelines.

Figure 107: MRI exams per 1,000 people (2014 or nearest year)



Source: (17)

Comprehensiveness

Despite recent efforts to expand physician and healthcare networks, the majority of GPs and specialists operate within single practices (4). This arrangement limits the breadth of services a patient receives when visiting their GP or specialist.

Coordination and continuity of care

As previously discussed, Austrian citizens have unregulated access to GPs and specialists. The principle of free provider of choice can act as a barrier to providing a high-quality healthcare system, given no single physician is responsible for managing and monitoring healthcare at the individual level. As frequently highlighted during roundtable stakeholder discussions, in Austria, this mean patients are often left

‘wandering’ the healthcare system, and thus accessing inappropriate levels of care. It is important to note that patient management is not required for all individuals, just those who suffer from one or multiple chronic conditions, and who therefore require access to a number of different healthcare providers.

Continuity of care between primary, ambulatory and inpatient care is further hindered by the dual financing system, where the Länder is responsible for inpatient care, and social health insurance for primary and ambulatory care.

6.1.3 Outcomes

Efficiency

Insufficient primary and ambulatory care has a negative impact on overall healthcare efficiency. This is evident in Austria, where there is a relatively high number of hospital admissions (see section 3.5 for further details). Frequency of access to care in Austria is also present across lower forms of care, specifically, at the outpatient and primary care level. For example, a report by Pichlhöfer and Maier (2014) found that unrestricted access to healthcare services has led to a relatively high overall utilisation rate (see section 3.5).

Equity

Equity of care is high in Austria given the vast majority of people have access to the social health insurance system. Inequity does however exist between social health insurers. Specifically, given multiple contractual agreements, the number of GPs and specialists available to patients, and reimbursable services, differ according to each health insurer. These differences occur despite harmonised contribution rates.

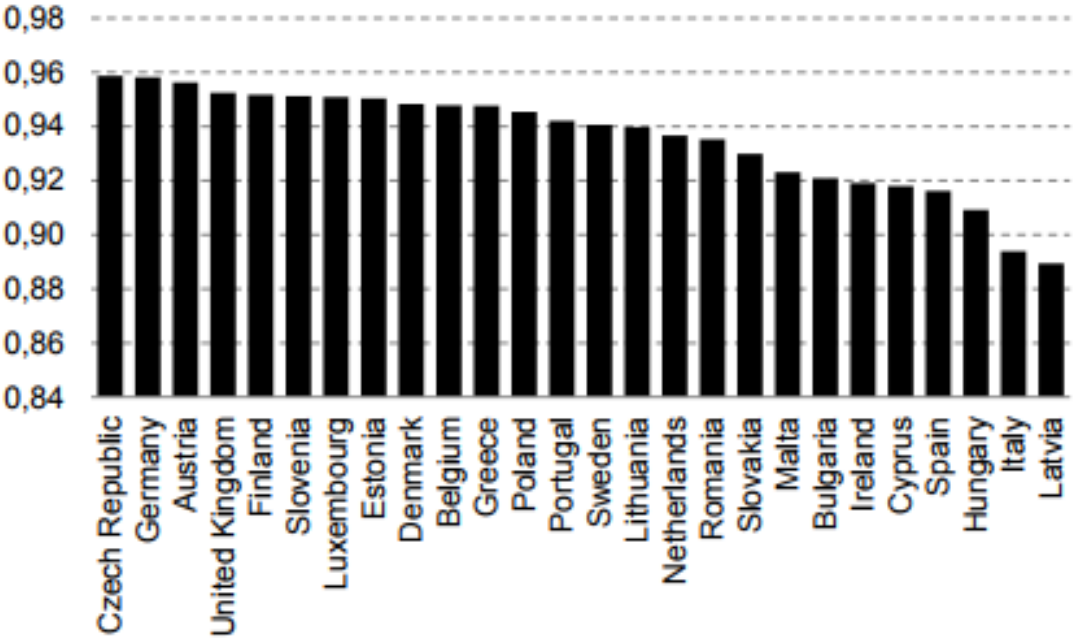
In terms of user chargers, social health insurance carriers have implemented differential user charges, which again may act as a barrier to healthcare for some. Further, the pharmaceutical expenditure cap (i.e. 2% of net income), although a positive initiative, is not in technical terms ‘progressive’ and thus adversely impacts those on lower incomes (see section 5.3 for further details on user chargers).

Summary

For the reasons outlined above, Austria frequently ranks poorly in terms of primary and outpatient care. For example, an international comparison of primary care by Stigler *et al.* (2012), classified Austria as a ‘low primary care country’ along with Belgium, France, Germany and the US (263). This finding was mirrored by Kringos *et al.* (2013) who also classified the system as ‘weak’ (267).

Despite this ranking, the vast majority of the population satisfied with the general outpatient sector (98%) and the treatment they receive (97%).⁶³ Further, a recent analysis comparing patient-provider interactions across all 28 EU Member States revealed Austria performs well in this area (see figure below). However, caution should be taken when interpreting these results given the authors had minimal knowledge of why patients report low or high levels of quality (65,268).

Figure 108: Quality of interactions between patient and primary care physician (score), EU(28), 2013



Source: Taken directly from (65,268)

6.2 Paying healthcare providers

6.2.1 Types of provider payment schemes

Predominate payment mechanism for primary/outpatient physicians and hospitals are fee-for-service (FFS) (healthcare providers are paid for each individual service), capitation (healthcare providers are paid a fixed amount per enrollee, which is independent of number of patients treated), physician salaries, and to a lesser extent, pay-for-performance (P4P) (269).

⁶³ Satisfaction survey (2015) completed as part of the Federal Health-Target contracts (objective 8.4.1).

In regard to outpatient services, the trend within this area has been towards blended payment, which incorporates elements of each of the four payment models outlined above (270). At the hospital level, payers of inpatient care have increasingly moved away from global budgets and

FFS to 'bundled' payments that group together components of healthcare (i.e. grouped packages of care, and grouped inputs to delivery of care) (270). Bundled payments within the hospital sector are generally classified under a DRG (diagnostic-related group) case-mix system. An overview of each of these payment methods is provided in Table 62.

Table 62: Type of provider payment methods

Payment method	Description	Unit of payment	Setting
Fee-for-service	Retrospective payment based on volume of individual services	Units of service	Hospital and physicians
Salary/global budget	Lump sum payment for a specific period of time	Time	Physicians
Capitation	Periodic lump sum payment per enrolled patient for specific services	Persons registered	Hospital and physicians
DRG	Statistical system that classifies inpatient stays for the purpose of reimbursement	Type of service	Hospitals
Pay-for-performance	Payment linked to quality of care provided	Performance	Hospital and physicians

Source: (270)

As outlined above, provider payments is one of the tools policy-makers can use to achieve health system objectives (271). Traditional methods of payment outlined above, however, do not directly align with all

health system priorities, such as efficiency, quality and equity. Further, many of these methods have inbuilt incentives that lower the quality of care. For example, FFS can lead to overprovision of services which inflates expenditure and, in certain circumstances, can worsen patient outcomes. Capitation, on the other hand, can control expenditure, however, it may lead to ‘cream skimming’ and cost-shifting. Lastly, the use of DRGs can encourage fraudulent behaviour given hospitals have an incentive to up-code in order to receive greater payments (see the following two tables for further details) (270,271).

In response to shortcomings associated with traditional payment methods, policy-makers have become increasingly interested in linking payments to the quality of care provided (i.e. P4P). In theory, P4P can overcome the principal-agent problem by aligning patient-provider incentives (269). Despite economic incentives, there is limited evidence to suggest P4P has a positive effect on health system objectives (further details on P4P is provided in section 6.4.4) (272).

Table 63: Payment mechanism objectives and unintended consequences

Payment method	Health system objective	Unintended consequences
Fee-for-service	Equity	Overprovision of services Superfluous care
Salary/global budget	Expenditure control	Under provision of services Creak skimming Quality skimping Cost-shifting
Capitation	Expenditure control	Cream skimming Quality skimping Cost-shifting
DRG	Expenditure control	Up-coding (fraud) Cream skimming Quality skimping

Payment method	Health system objective	Unintended consequences
Pay-for-performance	Quality	Gaming and risk selection Negative impact on intrinsic motivation Poor quality of care

Source: (272,273)

Table 64: Payment mechanism contribution to health system objectives

	Activity	Expenditure control	Quality	Equity	Efficiency
Fee-for-service	++	--	+/-	++	-
Salary/global budget	--	++	+/-	--	-
Capitation	-	++	+/-	-	+
DRG	+	+	+/-	0	++
Pay-for-performance	?*	+/-	+	?*	+

Source: (273) and author creation.

Note: ++ very positive impact; + positive impact; 0 neutral impact; - negative impact; --very negative impact; ? unknown. *Depends on the type of incentive associated with payment (e.g. incentive associated with treating more vulnerable groups, which would improve equity).

6.2.2 International case studies: Paying providers

Physician payment mechanisms across European social health insurance systems are similar. At the GP and outpatient specialist level, FFS dominates reimbursement, however, increasingly policy-makers are

introducing pay-for-performance (P4P) schemes to incentivise high-quality care. Despite this, P4P comprises a small proportion of overall income. At the hospital level, European social health insurance systems are reliant on diagnostic related groups (DRGs) to reimburse hospitals as a way to improve transparency and contain costs.

The remainder of this section provides a description of physician reimbursement schemes for GPs, outpatient specialists and hospitals, in Belgium, France, Germany, Netherlands, Switzerland and Austria.

Table 65: Physician reimbursement in Europe

Country	Primary care	Outpatient specialists	Inpatient care
Belgium	Largely FFS using national fee schedule, capitated budgets and P4P (lump sum payments)	FFS	Prospective budgets and FFS
France	FFS, capitation and P4P	FFS and P4P	DRGs
Germany	FFS and pay-for-performance	FFS	DRGs Set fees for highly specialised services
Netherlands	FFS, capitation, bundled payment	DRGs*	DRGs
Switzerland	FFS (national fee schedule) and capitation	FFS	DRGs
Austria	FFS and capitated flat rate payments	FFS and flat rate payments	Budgets informed by DRGs (i.e. LKF in Austria)

Source: See country descriptions below.

Note: *Dutch DRGs are referred to as DBCs, with the main difference being that they also include outpatient care.

Belgium

In Belgium, the majority of physicians work in independent medical practices and are self-employed. Medical specialists work in health institutions (mainly hospitals) and/or in an outpatient private practice (82).

Independent medical practitioners are largely paid on a FFS basis, with less than 1% of physicians being paid via a salary. Those who are salaried generally work in integrated medical health care practices owned by physicians and remunerated by National Institute for Health and Disability Insurance (NIHDI) (who manage compulsory health insurance) according to a capitation payment (82).

The proportion of income GPs receive from FFS, although still large, has been declining due to the increase in lump-sum payments linked to quality of care (i.e. from 2.6% of income in 2000 to 20% in 2010). Specifically, for:

- Managing a patient's global medical file (file of patient information held by the GP to share with other providers to improve care coordination)
- Coordinating disease management programs (e.g. type II diabetes and chronic kidney failure)
- Participating in continuing education activities and peer review sessions
- Being on call (274).

Specialists working in hospitals are also reimbursed through a FFS model using rates negotiated at the national-level. Although specialists theoretically get paid directly for their work, in reality, hospitals retain a proportion of fees in order to compensate for capital and other overhead costs (82).

Hospitals in Belgium are reimbursed through two separate mechanisms depending on the type of service being provided. Specifically, services such as accommodation, nursing activities/units, operating rooms and sterilisation are paid through a prospective budget system. Medical services, such as polyclinics and laboratories, for example, are largely paid via FFS (82).

*France*⁶⁴

The majority (58%) of GPs in France are self-employed in solo, group or multi-professional practices, and who are largely paid on a FFS basis (87% FFS, 13% on other forms of payments such as P4P and

⁶⁴ Information collected from D. Polton directly.

capitation⁶⁵). In addition, there are approximately 400 health centres who employ salaried GPs. Other funds stem from payments that are linked to improvements in care coordination. Specifically, in 2008, the Ministry of Health launched a pilot to test prospective payment schemes to encourage the development of multi-professional group practices in primary care (*Expérimentation de Nouveaux Modes de Rémunération*). The pilots included multi-professional group practices, healthcare networks and health care centres, who participated on a voluntary basis. The prospective payment comprised approximately 5% of general medicine practice revenue and can be broken down into the following three groups:

- Payment for time and costs associated coordinating care
- Payment for provision of new services for targeted patient groups
- Payment for cooperation through skill-mix modifications between medical and nursing staff.

An independent evaluation of the pilots by IRDES suggested the pilot scheme achieved its overall objectives of encouraging group practice and improving, to a certain extent, the geographical distribution of GPs, efficiency structures and quality of care (with results varying according to group structures).

The pilot program was later generalised for all multi-professional group practices. Under the scheme, multi-professional group practices can claim additional performance-based payments for three targets: *accessibility of health care* (e.g. opening hours, range of services delivered), *intensity of teamwork* (e.g. implementation of multi-professional guidelines for chronic diseases), and *utilisation of computerised patient medical files*, which are shared among all providers in the practice. Assuming a patient population of approximately 4,000 people, a multi-professional group practice can earn an additional €17,850 to €51,800 per year, depending on their performance. Although multi-professional group practices continue to grow, they still are in the minority, comprising between 10-15% of all GPs in France. Further details on the points-based payment scheme are provided in the tables below.

Lastly, GPs who set up their practice in underserved areas can receive a lump-sum payment of €50,000 to cover set-up costs, in addition to other financial incentives for operating in these areas. Although not performance related, GPs can obtain additional remuneration to help set up their practices (e.g. electronic medical records, organisation, care coordination, teleservices, coding of medical data, training of young doctors). This additional payment, as of 2017, amounted to €1,750, and will increase to €4,620 by 2019.

⁶⁵ In 2016, the latter component of GP remuneration (i.e. 13%), as of 2016, includes P4P (indicators related to care), a weighted capitated payment, payment linked to the organisation or the practice (e.g. software, electronic communication with sickness funds, training of young doctors, as well as additional payment in underserved areas.

Table 66: Remuneration system for integrated group practices (medical homes and network) – basic remuneration (France)

Target	Details	Points*
<i>Fixed remuneration</i>		
Access to care	<ul style="list-style-type: none"> • Open 8am to 8pm, Saturday morning and holidays • Access to unplanned care every day • Coordination function identified 	1,200 points
Team work and coordination	<ul style="list-style-type: none"> • Multi-professional protocols for some diseases 	500 points
IT system	Sharing of patients' records – 33% of patients in 1 st year, and 66% in second year	850 points
<i>Variable remuneration (depends on number of patients – following figures relate to 4,000 patients)</i>		
Team work and coordination	Formalised multi-professional coordination on a regular basis for some disease, synthesis in the electronic patient record	1,000 points
IT system	As above	1,500 points

Note: *€7 per point.

Table 67: Remuneration system for integrated group practices (medical homes and networks) – basic remuneration (optional) (France)

Target	Details	Points*
<i>Fixed remuneration</i>		

Target	Details	Points*
Access to care	<ul style="list-style-type: none"> • Consultations with specialist or midwife at one day per week • Range of specialists or types of professionals covered 	900 points
Team work and coordination	<ul style="list-style-type: none"> • Training of young professionals 	450 points
IT system	IT system labelled level 2	100 points
<i>Variable remuneration</i>		
Access to care	<ul style="list-style-type: none"> • Public health missions 	700 points
Team work and coordination	<ul style="list-style-type: none"> • Procedure to send health data to professionals and institution outside the medical home • Electronic medical record for all patients hospitalised to be shared with all professionals 	200 points

Note: *€7 per point.

Specialists in the outpatient sector who are self-employed are reimbursed via FFS (approx. 36%), while the remainder are employed by hospitals and either fully salaried or have mixed income. In 2014, the P4P scheme was extended to all self-employed physicians, not just GPs. On average, self-employed specialists can earn €5,480 per year, which constitutes about 2% of specialist income (275).

Finally, since 2008, all hospitals in France have been reimbursed according to a DRG system, which is used to pay physician salaries.

Germany

Social health insurance contracted physicians working in the outpatient sector are largely reimbursed on a fee-for-service basis. The fees that SHI reimburse for are outlined within the Uniform Value Scale (UVS) (Einheitlicher Bewertungsmaßstab), which sets out the range of healthcare services reimbursable by sickness funds at the outpatient level (276,277). A limit on the amount each physician can invoice their regional doctor association ((Kassenärztliche Vereinigungen (KV)) is determined every quarter (276,277).

Physicians at the outpatient level also receive additional flat-rate payments for each patient enrolled in a disease management program (DMP) (e.g. Type I and II diabetes, breast cancer, ischemic heart disease, asthma, and chronic obstructive pulmonary disease). In 2015, the flat fee amounted to €120 per patient (275,277). Further information on Germany's DMP is provided in section 6.4.4.

In line with international trends, Germany in 2005 began to gradually phase in DRGs, which were based on the Australian Refined DRG system. Today there exist approximately 1,200 DRG categories (275). On top of DRGs, there are additional fees for highly-specialised services (i.e. services that cannot be appropriately reimbursed through the DRG system) (277).

Netherlands⁶⁶

Payments for primary care consists of three layers. First, traditional primary care providers are reimbursed through a combination of capitation and FFS payments, which accounts for approximately 70% of turnover. Second, over the past decade primary care physicians have increasingly formed part of collaborative, joint regional out-of-office care centers; in addition, for certain chronic illnesses care pathways were funded (bundled payments). Forty care groups organise these forms of care on behalf of the participating primary care physicians (20%). Unlike FFS and capitated payments, these rates are not set by government. Thirdly, physicians can negotiate with insurance companies about 'innovation' funds (e-health, substitutions of care etc.) (which account for the remaining 10% of turnover).

Dutch insurers and hospitals negotiate on both the price and the volume of care. The prices of 70% of turnover are freely negotiable, which includes capital remuneration. The impact of rate setting is modest, although the Dutch Healthcare Authority sets the actual packages of care, which providers need to comply to. For certain expensive medicines, complex treatments and specific functions, separate sources of funding exist. Since 2014 just under half (45%) of self-employed hospital physicians are required to

⁶⁶ Information sourced directly from P. Jeurissen (member of the international evaluation committee)

negotiate with the hospital on their reimbursement, that is there are no longer formal negotiation partners for the insurance companies.

The Government's fiscal policy tries to ensure that provider payments comply with a central goal of total health expenses. Due to limited formal influence on actual payments (especially for hospitals), they have done this by negotiating subdued annual budget raises. An overrun of a certain subsector of providers can be recouped retrospectively according to each provider's market share. To date this instrument has never been used.

Switzerland

Outpatient GPs and specialists are paid by a mix of FFS and capitation. Specifically, 90% and 91% of GP and specialist payments are via FFS, with the remainder funded through capitated budgets. Since 2004, standardised fees for clinical outpatient procedures (both diagnostic and therapeutic services) have been set out in TARMED (278). Specifically, TARMED assigns a uniform tariff point to each service which is negotiated and agreed upon by the association of physicians and hospitals on the provider side, and by tarifsuisse SA or curafutura on the purchaser side (health insurance associations). The objective of introducing TARMED was to harmonise the amount healthcare providers were reimbursed across cantons (278).

Hospital outpatient acute care is also paid on a FFS basis using the TARMED points based system, however, the points differ for physicians working in ambulatory care (i.e. GPs and outpatient specialists) (278).

As of 2012, acute care hospitals in Switzerland have been paid according to the national SwissDRG system in order to harmonise hospital payments and improve transparency and efficiency. The SwissDRG model is based on the German DRG model, which was in turn was based on the Australian system. Just under half of inpatient admission costs are borne by health insurers, with the remaining amount under the responsibility of canton governments (278).

Austria

GPs and specialists who are contracted with a social insurance carrier and working in the outpatient sector are reimbursed through a mix of FFS and flat-rate payments. The proportion of reimbursement from each payment mechanism depends on the social insurance carrier. For example, ASVG GPs are largely paid through contact capitated payments, which are paid in full the first time a patient visits a GP within a three-month period (approximately 70%), and to a lesser extent FFS for specific services (approx. 30%)

(279). Within smaller health insurance carriers, however, physician payments are mainly based on FFS (approx. 90%).

In regard to outpatient specialists, again physician payment mechanism depends on which social health insurer the physician is contracted with. Unlike GPs, the primary form of payment for ASVG funds and smaller funds is FFS (i.e. 70% of ASVG and 90% of small carriers pay physicians on a FFS basis) (280).

For contracted physicians, treatment tariff levels are based on ‘staffing plans’, which are negotiated between individual health insurance carriers and regional physician chambers. For this reason, the income of a physician will depend on which health insurer(s) he/she is contracted with (37).

Non-contracted physicians, Wahlärzte, are paid directly by patients, with patients being reimbursed 80% of the cost charged by contracted doctors (37).

Hospital outpatient clinics and acute care are financed by a mix of social insurance carrier lump sum funds and by federal authorities, Länder and local authorities. Hospitals in Austria are reimbursed through budgets, which are informed by the country’s DRG system (i.e. (Leistungsorientiertes Krankenanstaltenfinanzierungssystem (LKF) – performance-orientated hospital financing)) (270,279). In 2016, the Austrian DRG system was extended to outpatient departments within hospitals in order to prevent unnecessary hospitalisations (for example, for services such as colonoscopies, or for surveillance purposes).

Figure 109: Austria’s DRG system (LKF)

<p>Year</p> <p>The Austrian DRG system was introduced in 1997.</p>
<p>Responsibility</p> <p>Federal Health Commission (Bundesgesundheitskommission), Executive Body of the Federal Health Agency (Bundesgesundheitsagentur), is in charge of ‘setting the terms related to the country’s DRG model. The Commission is comprised of representatives from national government, social insurance carriers, local authorities, hospitals, Chamber of Physicians and patients.</p> <p>The Commission has also set up a DRG Working Group who are responsible for maintenance and development of the system.</p>
<p>Objectives</p>

- Increase transparency
- Contain costs
- Optimise use of resources
- Reduction of unnecessary and multiple procedures
- Shift care to the outpatient sector, where possible
- Reduction in acute beds.

LKF areas

There are two funding areas associated with the LKF, the *core area* and the *control area*. The first relates to inpatient hospital stays, which are awarded points based on diagnosis-related case groups (i.e. the 'core area') (Hauptdiagnosegruppen). The core area determines budgets for hospitals. The budget of each State Health Fund is then dispersed across hospitals based on their total-point value. The control area, on the other hand, takes into account special care provisions that differ across each Land (medizinische Einzelleistungen). In essence, LKF points for the core area depend on main diagnosis, as opposed to the main services provided for the control area. Together, both areas form the performance-orientated case groups (Leistungsorientierte Diagnosefallgruppen, LDF).

Monies that are reserved for hospital financing through the State Health Funds are divided according to the total number of LKF points, which are invoiced by providers. To take into account different circumstances across the Lands, each LKF point differs according to regions. For example, as of 2015, remuneration per LKF point equated to €1.28 in Vorarlberg, compared to €0.35 in Burgenland (with an average of €0.82 across Austria).

Source: (279,281,282)

6.3 Contractual agreements between physicians and social health insurers

6.3.1 Overview of contractual agreements in Europe

Within social insurance systems, tariffs for outpatient services (i.e. GPs and specialists), and to a lesser extent, volume and quality, are negotiated between physicians and health insurers. It is typical within Europe for negotiations to occur between physician associations and health insurer associations, with the agreement being formalised within a general contract. One major exception occurs in the Netherlands,

where GPs are legally restricted from entering into general contracts and can only jointly discuss contractual arrangements when in the best interest of patients.

Although general contracts are the ‘norm’ in social health insurance systems, countries such as Germany and Switzerland have allowed insurers to sign selective contracts in regard to integrated care models. The objective of this arrangement is to improve competition and thus the quality of care.

The remainder of this section discusses contractual negotiation processes for the outpatient sector in a range of European countries operating social health insurance models. Contractual negotiations at the inpatient level (i.e. hospitals) have also been included, however, they are not the focus of this report given, in Austria, social health insurance carriers do not have a say in hospital contracts.

Table 68: Overview of contractual arrangements between physicians and health insurers in a selection of European countries (non-hospital based care only)

Country	Key players	Collective or selective contracts	Volume control
Belgium	Healthcare provider organisations and sickness funds	Collective contracts	No*
Germany	National and regional association of SHI physicians, and National Association of German Sickness Funds	Collective contracts, with selective contracts for integrated care models	Yes
France	Physician unions and national health insurance union Relevant health ministry	Collective contracts	No
Netherlands (primary care only)	Care groups and health insurers	Individual contracts	Yes
Switzerland	Healthcare insurance associations, tarifsuisse,	Collective contracts, with an option for	No

Country	Key players	Collective or selective contracts	Volume control
	and associations	physician selective contracts for integrated care models	
Austria	Regional sickness funds and regional medical chambers	Collective contracts	Largely no**

Source: See country descriptions below. Note: *Regulations control exist, however, they are not discussed within contractual negotiations (e.g. the number of inexpensive medicines was imposed on all doctors by Royal Decree). **A limit on the number of procedures, which can be performed by outpatient specialists and GPs is applied (no such cap exists for services).

6.3.2 Belgium

Negotiation process: outpatient and inpatient care

The fee schedule for GPs, specialists and hospitals reimbursable by sickness funds (i.e. the nonmenclature) is negotiated annually or biennially between sickness funds and healthcare provider representatives (e.g. doctors' organisations and hospital federations) (283,284). These discussions also include arrangements pertaining to content, quality and quantity of care. For the purpose of these negotiations, sickness funds work collectively, and could be viewed as representing patient interests (283).

Discussions surrounding GPs and specialists (inpatient and outpatient) take place within the National Commission of Representatives of Physicians and Sickness Funds (also referred to as the 'Medico-Mut'), which sits within the National Institute for Health and Disability Insurance (INAMI) (285). The Medico-Mut is comprised of both provider organisation and sickness fund representatives (50/50 split).⁶⁷

The agreement on tariffs/fees within the Medico-Mut must be accepted by the Minister of Social Affairs, and, in general, last for up to two years (284,286). An approval of fees by the Minister may be overturned if the following two scenarios occur:

- Over 40% of physicians within a region reject the agreement

⁶⁷ For general physicians: there are three members from the AADM, two members of the Cartel and one from the BVAS. For medical specialists: there are five members of the BVAS and one members from the Cartel (285). Members are elected every four years (285).

- Over 50% of GPs and 50% of other medical specialists in total reject the agreement (284,286).

Given the above two scenarios do not eventuate, fees agreed by the Minister will take effect 30 days after publication within the Belgium Official Journal (where laws, royal decrees, ordinances etc. are published) (286).

Physicians who sign up to the agreed fee level must charge these prices, and in return, receive benefits, such as a ‘supplemental pension plan’ (4, page 226). Physicians also have the option of not signing up or partially signing up to the set fee level. Those who do not sign up to the agreement have the flexibility to set their own fees. Any difference in the fee set by the physician and that agreed by the Minister must be paid by the patient. In 2015, 11.4% of GPs and 19.2% of specialists refused the set fee level (287). Refusal by specialists is particularly high for those working within obstetrics and gynaecology, ophthalmology, and orthopaedics (286).

If, however, the two scenarios occur, one of the following three paths will be taken: a) publically imposed fees; b) a restart of negotiations; or c) fixed reimbursement tariffs (82).

6.3.3 France

Negotiation process: outpatient care

Since the introduction of social security in France, prices and volumes of healthcare services have been negotiated between independent physicians and insurance funds (288,289). Prices for new and existing procedures is negotiated and agreed by ‘physician unions’ (of which there are three) and the National Union of Health Insurance Funds (Union Nationale des Caisses d’Assurance Maladie) (UNCAM) (288,289). The rates for healthcare services, that is, the tariff level, is defined within a *Tarif de convention* (tariff references) (288,289).⁶⁸ Nearly all healthcare professionals (99.2% in 2014) agree to the tariff. Specifically, of the 116,126 physicians in independent practices, 912 are not part of the general contract (707 are GPs and 205 are specialists).⁶⁹ Despite this, 50% and 8% of specialists and GPs have the right to bill more than the official tariff rate, respectively. The right to balance bill is a significant problem in France as it limits

⁶⁸ Conventions exist for doctors, nurses, physiotherapists, transport, medical device suppliers and biological laboratories.

⁶⁹ Information sourced from D. Polton (CNAMT) (2017).

access to healthcare for those on low incomes.⁷⁰ Lastly, conventions are typically discussed and agreed upon every four to five years, however, regular amendments occur throughout this period (288,289).

The relevant ministry of health has two key roles during negotiations. Firstly, the financial mandate for each profession is discussed and defined with the Ministry prior to the negotiations, as well as the priorities and objectives. For example, in 2012, the new Government asked the UNCAM to open a negotiation to find a solution to the issue of 'sector 2' (physicians having the right to bill more than the official tariff). Secondly, in the case where negotiations breakdown, the Government appoints a single arbiter,⁷¹ as was the case with dentists in France recently, who has the legal right to deliver a contract to the relevant ministry of health, if an agreement can still not be reached. The role of the Ministry in negotiations has only been made explicit in legislation recently. Specifically, the recent law of the future of the healthcare system states that the Ministry issues guidelines prior to all negotiations. This arrangement has been seen by the medical profession as a constraint on and limitation of their freedom to negotiate.⁷²

As outlined by Chevreul *et al.* (2015) and Johnson *et al.* (2017), negotiations between providers and insurers is strained due to the high degree of power exercised by medical professional associations (288,289).

Negotiation process: inpatient care

At the hospital level, it is the responsibility of the Health Minister to set DRG rates, which determines the reimbursement rate paid by social health insurers. Most hospitals have an agreement with a social health insurer, however, for those that do not, patients are required to pay out-of-pocket for care, which is later reimbursed according to a specific statutory tariff (288).

6.3.4 Germany

Negotiation process: outpatient care

Reimbursement arrangements for private physicians in Germany are complex. Under the system, private physicians authorised to treat compulsory health insurance patients bill their regional association of social

⁷⁰ Ibid.

⁷¹ In recent years, an arbiter from the Auditor Commission has been used.

⁷² Information sourced from D. Polton (CNAMT) (2017).

health insurance physicians (Kassenärztliche Vereinigungen (KV)) every quarter. KVs are then responsible for distributing pooled funds to physicians. For more details on KVs, see Table 69. At the national level, the 17 KVs are represented by the National Association of Statutory Health Insurance Physicians (Kassenärztliche Bundesvereinigung (KBV)) (290).

Table 69: Overview of Germany's regional association of social health insurance physicians

Characteristic	Description
Number	17 KVs in total (one in each region, except for North Rhine-Westphalia, which has two)
Membership	Compulsory
Number of physicians covered	Approximately 141,000 physicians
Management	Each KV is governed by an executive board, which consists of physicians serving on a voluntary, part-time basis
Role	Ensure those covered by statutory health insurance have access to a sufficient level of outpatient care. They also represent physician interests, and enter into general contracts with sickness funds regarding benefit packages and reimbursement.

Source: (89,276)

Services provided by social health insurance (SHI) physicians that will be reimbursed by sickness funds is outlined within a Uniform Value Scale (UVS) (Einheitlicher Bewertungsmaßstab). The medical services within the UVS are each assigned a rating score, thus each SHI physicians records the total number of his/her points each quarter and reports this to their regional KV for reimbursement (89,276) (further details of the UVS are provided in Figure 110).

Responsibility for the Uniform Value Scale falls under the remit of the Valuation Committee (Bewertungsausschuss), which is comprised of representatives from the KBV and the National Association

of the Germany Statutory Sickness Funds (GKV-Spitzenverband). General contracts made at the federal level act as a framework for discussions that occur at the regional level (291).

Figure 110: Germany's Uniform Value Scale

<p>Purpose</p> <p>Sets out the range of healthcare services reimbursable by sickness funds at the outpatient level. Specifically, each service that sickness funds will reimburse for is assigned a relative weight, which informs how much the physicians will get paid.</p> <p>Responsibility</p> <p>Valuation committee which is made up of representatives from the Federal Association of SHI Physicians and sickness fund federal associations. If a decision cannot be reached, the Federal Ministry of Health (MOH) can enforce extended Valuation Committee members be brought in to reach a decision. MOH can also define alternative arrangements if no resolution is reached.</p> <p>Coverage</p> <p>Social health insurance physicians can only invoice for services within the UVS.</p> <p>Volume control</p> <p>Each quarter social health insurance physicians are informed of how many UVS points they can be reimbursed for.</p>
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Source: (292)

To minimise the physician's incentive to over-supply services, since 2009, a limit on the volume of standard services has been applied. Specifically, at the beginning of each quarter, physicians are informed of the maximum volume of services they will be reimbursed for (89).

With the introduction of the Social Health Insurance Modernization Act (2004) (GKV-Modernisierungsgesetz), selective contracting has been permitted for models of integrated care. This allows individual health insurers to negotiate services and prices with individual or groups of healthcare providers (271). The ability for sickness funds to contract directly with healthcare providers is meant to increase competition and thus improve healthcare quality and efficiency (89,276).

Negotiation process: inpatient care

Capital investments are financed through the Länder, while hospital running costs are financed primarily by sickness funds, but also through private health insurers and patient out-of-pocket payments. Running costs are negotiated between individual hospitals and regional sickness funds associations (276).

Legally, sickness funds negotiate contracts with hospitals, which they are allowed to reject. However the final decision is taken by state governments (277).

6.3.5 Netherlands

The negotiation process between sickness funds and healthcare professionals has been broken down into the following segments: primary care and hospitals.

Negotiation process: outpatient care (GPs)

Up until 1998, GPs negotiated as a collective group regarding contractual arrangements on price, volume and service levels. The Dutch Competition Act in 1998 saw GPs come under intense scrutiny, which led to a ban on group negotiations. Later, in 2011, GPs were fined up to €7.7 million if they were found to be colluding. The fine was removed in 2015, and GPs were again allowed to cooperate when it is in the best interest of the patient (293). That is, GPs can legally discuss with one another conditions of the contract, however, they must sign individual contracts with health insurers, four of which control 90% of the market (294).

Health insurers contract independent GPs for core primary care services on the government set capitation and fee-for-service rates (approximately 70% of services). Remaining services for integrated care (bundled payments) (20% of services) and innovative care models (10% of services) are negotiated between GPs and health insurers (see Table 70 for further details).

Table 70: Overview of primary care payment models (Netherlands)

Segment	Proportion of funding (approx.)	of Activities	Payment type	Price setting
Segment 1	75%	Core primary care services	FFS and capitation	Set by the Dutch

Segment	Proportion of funding (approx.)	of Activities	Payment type	Price setting
				Healthcare Authority (government)
Segment 2	15%	Integrated care: diabetes, management, asthma and COPD*	Bundled payment	Negotiated between care groups and insurers
Segment 3**	10%	Pay-for-performance and innovative care models***	Linked to quality	Negotiable between GPs and insurers****

Source: (293,295,296)

Note: *CVD = cardiovascular disease, and COPD = chronic obstructive pulmonary diseases. ** Segment 3 acts as a 'top-up' payment for GPs, therefore most GPs will include this in their contract. ***For example, accessibility and prescribing efficiency. ****This type of negotiation is less common.

During negotiations regarding bundled payments for chronic conditions, GPs are generally represented by care groups, of which there are 40. Care groups are legal entities that, on behalf of the self-employed GPs, act as the contracting organisation between providers and insurers (297). GPs are a central element of these care groups, with a median of 50 GPs in one care group (numbers vary between 4-150 GPs) (297).

Negotiation process: inpatient care (including outpatient specialists)

Prices and volumes of healthcare within this setting are negotiated between the nine independent insurers and the 110 hospitals (298). In theory, insurers and/or hospitals can engage

The amount paid to hospitals is determined, since 2005, by Diagnosis Treatment Combinations (DBC), a concept similar to diagnostic-related groups (295).⁷³ Initially, only a small proportion (10%) of rates for hospital services were freely negotiable, however, this gradually increased to 70% in 2012 (298). The remaining 30% of hospital service rates are set nationally, and are non-negotiable. Specifically, the Dutch Healthcare Authority sets a ceiling price (296). Negotiations at the hospital level also determine outpatient specialist fees, who are reimbursed according to the same DBC system.

To avoid hospitals setting unreasonable high prices for services that are negotiable, insurers can enter into selective contracts with hospitals (298).

6.3.6 Switzerland

Collective contracts are negotiated between healthcare providers and healthcare insurance associations, of which there are three:

- *Santésuisse* (largest of all the three) (represents approx. 50% of insurers)
- *Curafutura* (represents approx. 40% of insurers)
- *Association of Small and Medium Insurers* (RVK) (represents approx. 10% of insurers) (99).

Contracts outline the tariff level for healthcare services, as well requirements regarding efficiency and quality. However, the latter are neither specific nor monitored (99).

Contracts may either be national or set at the canton level; within the former, contracts become valid if approved by the Federal Council, while the latter can be approved by cantonal governments (99).

An overview of the contracting arrangements in ambulatory care and hospitals is provided below:

Negotiation process: outpatient care

The tariff schedule for primary and specialised care in Switzerland is defined within TARMED, which is run by TARMED Suisse, a corporate institution. The reimbursement rate within TARMED is negotiated between the association of physicians and hospitals on the provider side, and by tarifsuisse SA or curafutura on the purchaser side. Tarifsuisse SA, was developed in 2010, and can be contracted by MHI

⁷³ Statistical system that classifies an inpatient stay according to various factors (e.g. patient age and sex, presence of co-morbidities, complications associated with the procedure). Cases with a DRG group are meant to economically and medically similar (299).

companies to negotiate contracts with healthcare providers. As of 2015, tarifsuisse represented approximately 75% of all MHI companies. In the case where an agreement is not reached, the cantonal government can define the reimbursement rate (99).

If an insurer does not wish to be part of a collective contract, it can choose to selectively contract with physician networks or health management organisations. Despite this, physicians within these contracts must follow the TARMED fee schedule (99).

Negotiation process: inpatient care

Similar to other developed countries, hospital reimbursement rates are defined within a DRG system, which acts as a national tariff framework. In Switzerland, DRG rates are specified within SwissDRG SA, a corporate institution. The rate for each DRG is negotiated between hospitals (either at an individual or group level) and healthcare insurance associations. These rates must be approved by cantonal authorities, who in the case of no agreement, can fix the DRG base rate. Recommended DRG rates are provided by the Price Supervisor, which sits within the Federal Department of Economic Affairs, Education and Research. DRG rates agreed by cantons that are above the recommended rate must be justified (99).

6.3.7 Austria

Formally, it is the responsibility of the HVSV to negotiate all contracts between health insurance carriers and the Chamber of Physicians (§341 ASVG). In practice, however, general contractual agreements (Gesamtvertrag) are negotiated and agreed between the respective Chamber of Physicians (regional or federal) and individual or groups of social insurance carriers, with the HVSV signing off on agreements once they have been reached. In regard to groups of carriers, an example are the BKK and SVB who partner with regional insurance carriers (GKKs) to streamline administrative processes and increase bargaining power (§2).

Contractual negotiations include discussion and agreement on fee schedules, which include reimbursable services, as well as the number of contracted physicians per region (§342 ASVG). Posts are filled using criteria developed by the Chamber of Physicians, which are proposed to the Ministry of Health and Women's Affairs (§343 (1a) ASVG). General contractual agreements are then used as the basis for individual contracts, which are signed between the physician and the social health insurance carrier.

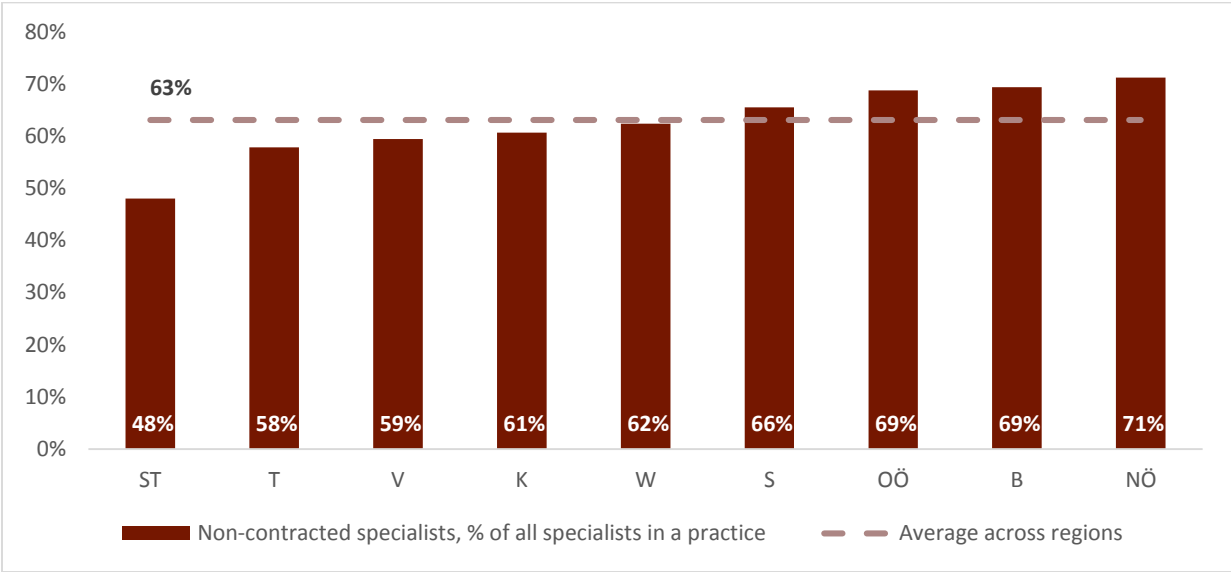
If an agreement between social health insurers and the Chamber of Physicians cannot be reached, the Federal Arbitration Committee can postpone the termination of the contract for up to three months. After this period, physicians have the power to charge their own prices (vertragsloser Zustand), which patients

must pay OOP for. If a patient visits a non-contracted doctor, social health insurers will generally only reimburse 80% of the cost charged by contracted doctors (it is only general as KFAs reimburse patients 100%, while other social insurers may fully reimburse for certain services).

By law (§338 (2) ASVG), insurance carriers are obliged to ‘try hard’ to conclude general contractual agreements, however, such agreements are not compulsory. As a result, the Chamber of Physicians can exercise significant power during negotiations. Even after an agreement is signed, physicians can continue to exercise power by terminating a contract, as long as three-months notice is given. Social health insurers, on the other hand, can only end a contract in the case of severe misconduct.

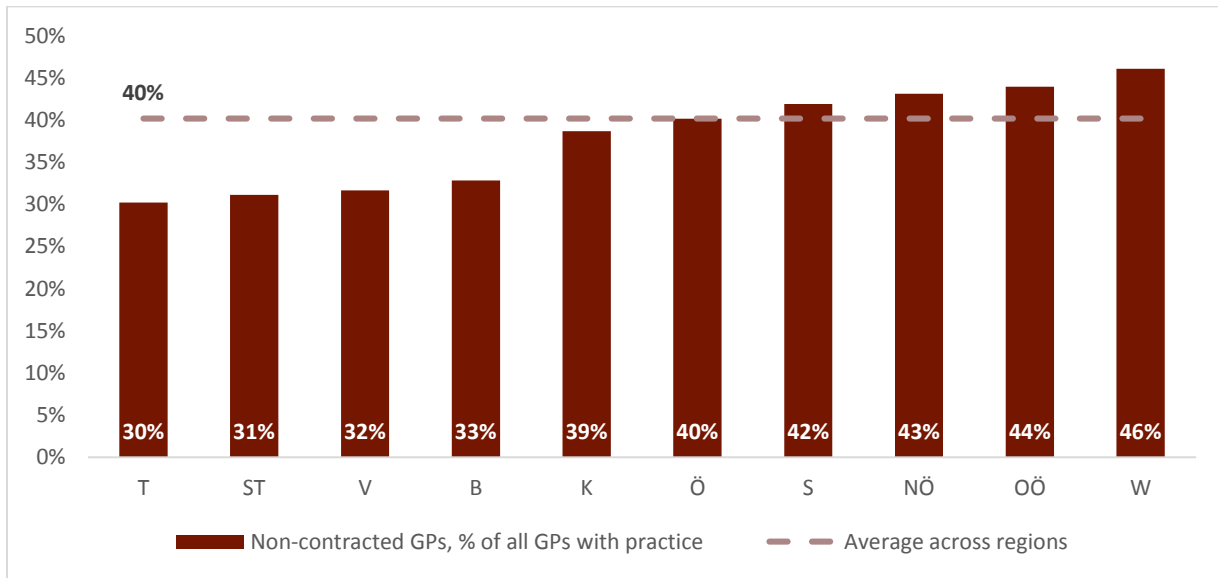
Not all physicians choose to enter into contractual agreements with social health insurers. Patients who choose to visit non-contracted doctors (i.e. Wahlarzt) pay OOP, and must apply for reimbursement from their social health insurer who will re-pay 80% of the cost charged by contracted doctors. On average, 63% of specialists working in practices, and 40% of GPs working in practices are not contracted with a social health insurance carrier. These figures appear significantly high given 99% of the population are covered by social health insurance.

Figure 111: Non-contracted specialists as a % of all specialists working in a practice (all regions)



Source: IHS (2017)

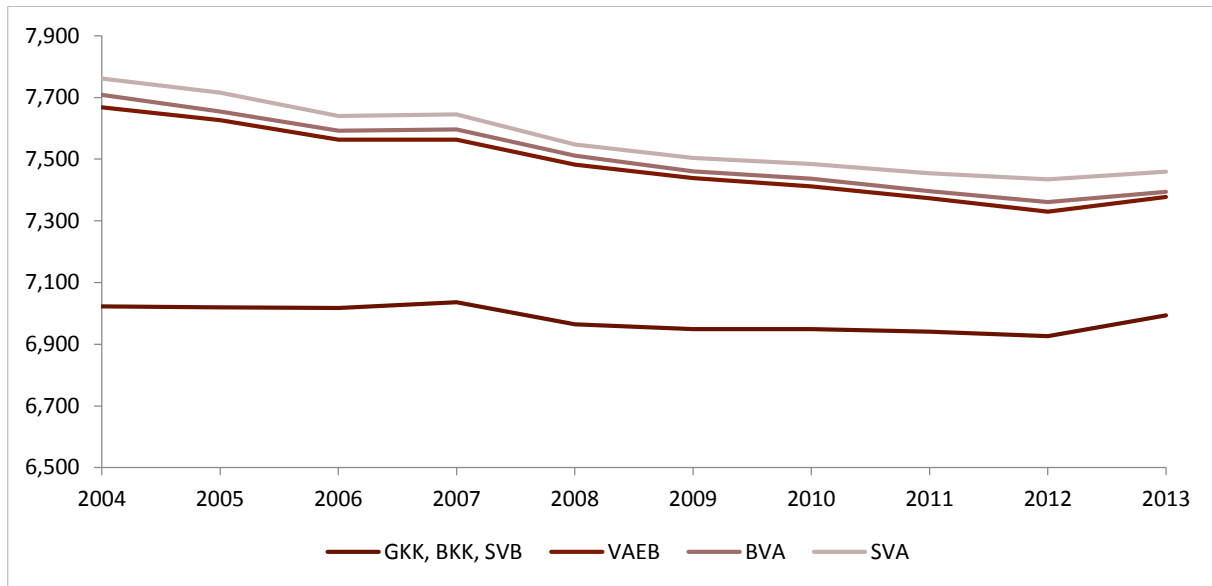
Figure 112: Non-contracted GPs as a % of all GPs working in a practice (all regions)



Source: IHS (2017)

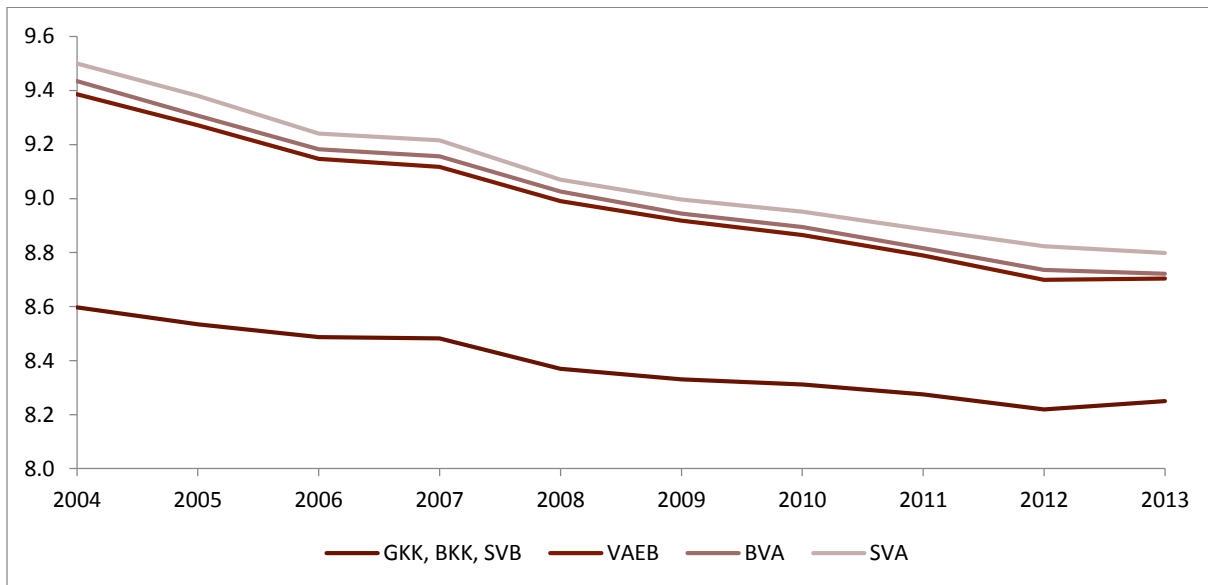
As outlined in the figures above, non-contracted doctors make up a significant proportion of all doctors working within the primary and ambulatory care. This proportion may continue to rise with historical data showing a downward trend in the total number of contracted doctors per 10,000 people (despite there being an increase in the number of contracted doctors for §2 carriers between 2005-15). This may be a result of several factors such as: increasing population, more doctors joining group practices and/or the large number of students studying medicine (prior to university restrictions). Further, the overall headcount of doctors may not accurately reflect the number of full-time doctors.

Figure 113: Trend in the total number of contracted doctors by insurance carrier (2004–2013)



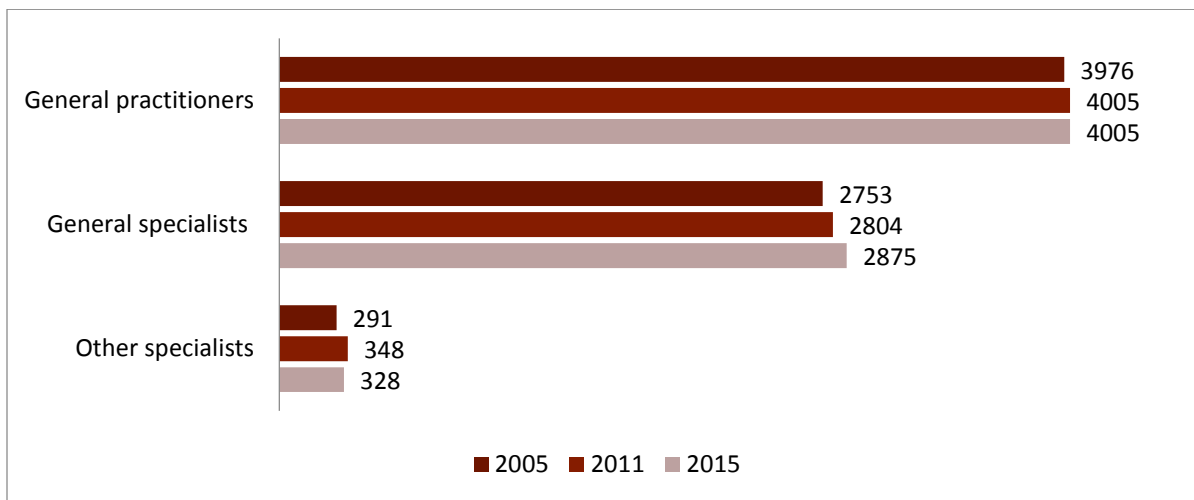
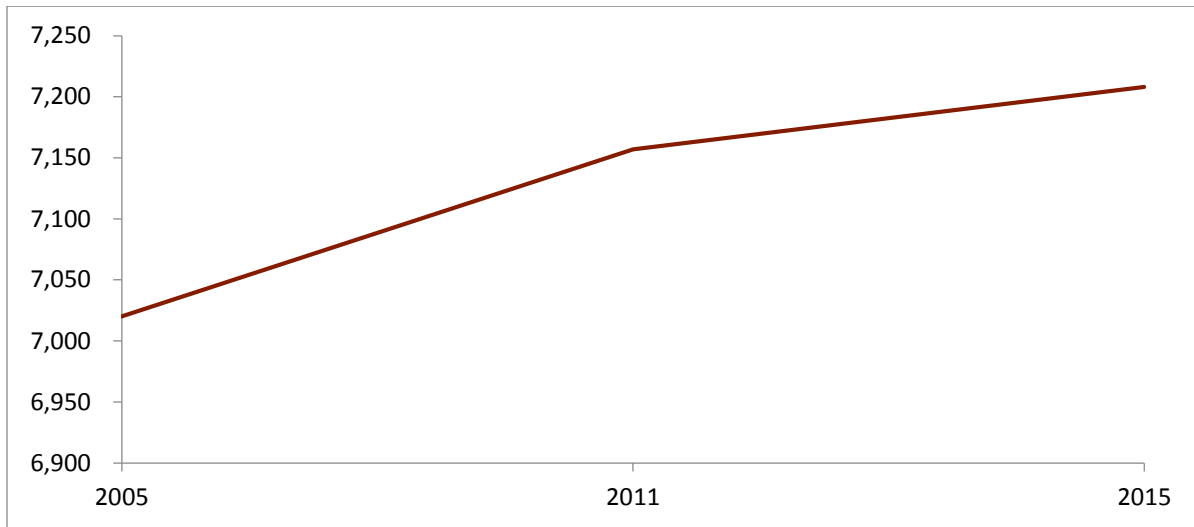
Source: Ärztekostenstatistik 2006-2015

Figure 114: Trend in the number of contracted doctors per 10,000 people by insurance carrier (2004–2013)



Source: Ärztekostenstatistik 2006-2015, Statistik Austria Bevölkerungsstatistik

Figure 115: Trend in overall number of contracted § 2 physicians (2005-15)



Source: Analysis completed by IHS (2017), based on HVSV data.

Comparison with European countries

As evidenced by the above country descriptions, complex arrangements for contractual negotiations exist across Europe. At a high-level, the contractual arrangements in Austria closely mirror those in France and Germany. Systems in the Netherlands, Belgium and Switzerland differ in certain key aspects. For example, in the Netherlands, the government (Dutch Healthcare Authority), limits the role of health insurers and providers by setting prices for core primary care services and 30% of DBCs. Further, at the outpatient level, GPs are legally forbidden from negotiating as a group, thus only selective contracts are permitted. In Belgium, the Minister of Social Affairs must agree to the price agreed between insurers and providers,

which can later be overturned if rejected by a certain proportion of physicians. Lastly, regarding inpatient care in Switzerland, DRG prices are initially provided by an external Price Supervisor, which plays a significant role in determining DRG rates agreed between insurers and hospitals. Arrangements within Netherlands, Belgium and Switzerland may act to reduce the variability of contracts between health insurers and healthcare providers within respective countries.

6.3.8 Policy options: Contractual agreements between physicians and social health insurers

Based on a review of payment systems contractual arrangements in Austria and Europe, a range of policy options have been developed (see Table 71). Each of the 12 policies proposed aim to achieve one or more of the following objectives:

- Promote harmonisation of services and prices across physicians
- Enhance primary and outpatient care in order to reduce the number of hospital admissions
- Encourage coordination of care
- Promote financial sustainability within the healthcare system
- Create a level playing field during contractual negotiations between social health insurers and physicians.

Each policy option has been categorised by an implementation period, that is, short, medium or long term, which reflects its priority. Specifically, policies classified as being implemented in the short-term indicate that the policy is of high importance and should take precedence over medium and long-term policies.

Table 71: Contracting policy options overview

Policy option theme	Policy option description	Implementation period
Contractual negotiations	Introduce external arbiter to assist in contractual negotiations	Short-term
	Allow health insurance carriers to contract selectively for certain services	
Structural plans	Introduce an independent committee to provide advice on number and location of contracted physician posts	Short-term
Harmonisation amongst outpatient specialists	Harmonise coding among specialists to improve transparency	Short-term
Enhancement of primary and outpatient care	Continued investment in multi-professional practices	Short-term
	Better training for GPs within the system	
	Improved system coordination via ELGA	
	Further investment in Disease Management Programs	
Bundled payments	Introduced bundled payments for multi-morbid patients across the healthcare spectrum via joint SSI and Länder budgets	Medium-term
Rural GPs	Incentivise GP specialisation and networks in rural areas via a change in the payment scheme (i.e. risk-adjusted capitation and FFS)	Medium-term
GP remuneration (all GPs)	Extend risk-adjusted capitation and FFS to all GPs across Austria	Long-term
Enhance role of GPs	Introduce voluntary scheme to incentivise patients to have referrals from a GP to access certain outpatient specialists and inpatient care.	Long-term

Short-term policy options

Contractual negotiations

To create a more level playing field between social health insurance carriers and the Chamber of Physicians during contractual negotiations, the following two mutually exclusive options are proposed.

The first option would allow the Federal Arbitration Committee to postpone the termination of contracts from three to six months (where during this period the current contract would remain in place). If after six months, an agreement cannot be reached, an external arbiter would be introduced to facilitate discussions. Given the Chamber of Physicians and social health insurers are still unable to conclude contract negotiations, the Ministry of Health and Women's Affairs, based directly on the recommendations of the arbiter, would have the possibility to determine the final contractual agreement.

Regarding the arbiter, initially, social health insurance and the Chamber of Physicians should be given the option to mutually appoint an arbiter. If this is not possible, the arbiter could be set by the Ministry of Health and Women's Affairs.

The second option would allow social health insurers to contract selectively with physicians for certain items within contractual agreements, that is, items that cannot be agreed upon in the general contract. For example, social health insurance could be given the option to selectively contract physicians to fill vacancies. Such an arrangement exists for primary healthcare units, however, the Chamber of Physicians must be in favour.

Introducing selective contracting for general contracts is unlikely to be successful given physicians have the option to work as non-contracted physicians, with patients submitting invoices to social health insurers.

Legal considerations

Even though no particular constitutional impediments have to be faced with respect to both options, a number of amendments to the current system of contractual agreements would be required.

Structural plans

Going forward, regional structural plans for health (Regionaler Strukturplan Gesundheit) will define the number of ambulatory physician units (ÄAVE) for each specialty within a region (both for contracted outpatient specialists and for those working in hospital outpatient departments). Given, social health insurers must then reach an agreement with the Chamber of Physicians (who are not involved in regional structural plan discussions) to either increase or decrease these numbers (former being easier to achieve,

given it is near impossible for social health insurers to terminate contracts), the impact regional structural plans will have on ensuring contracted physicians posts are needs-based is unclear.

If regional structural plans fail to achieve their desired objective, an independent committee could be established to provide recommendations on the number and location of GP and specialist physicians. Recommendations would form the basis of contractual negotiations between social health insurers and the Chamber of Physicians, with any deviation from recommendations being justified to the Ministry of Health and Women's Affairs. All new posts would be subject to findings from the independent committee, however, changes to existing posts should be phased in over a period of time (e.g. 10 years).

Legal considerations

Even though no particular constitutional impediments have to be faced with respect to this option, some amendments to the current system of contractual agreements would be required.

Harmonisation among outpatient specialists

Contracts between social health insurance and the Chamber of Physicians set out services and associated fee schedules. As discussed in section 5.2, services across social health insurers are not harmonised, further, the naming of services/items also differs. In regard to the latter issue, different naming of services/items makes it extremely difficult to compare prices across insurers. For this reason, it is proposed that coding of services/items within contracts be made consistent across insurers, thus improving price transparency.

Legal considerations

No particular legal impediments have to be faced in this respect.

Enhancement of primary and outpatient care

It has been suggested that if a proportion of hospital admissions is reduced, immediate cost savings will be realised. Specifically, a recent report on efficiency potentials within the Austrian social insurance system (2016) quoted the Austrian Court of Auditors (Rechnungshof), which stated that shifting resources from the inpatient to outpatient sector (i.e. so that the number of acute beds equates to the European average) can lead to savings of €2.9 billion (300). However, in order to maintain high-quality care, whilst simultaneously reducing hospital admissions, significant investment in outpatient and primary care is required in the first instance. Therefore, in the short-term, costs may increase as hospitals will need to be subsidised for structural fixed costs, such as employee salaries and maintenance of buildings.

Austria has recently implemented reforms at both the outpatient and primary care level to reduce the relatively high burden placed on hospitals. At the outpatient level, Austria has recently extended DRGs to hospital outpatient departments to limit the number of unnecessary inpatient admissions (301).

At the primary care level, two primary healthcare units have been implemented, with plans to extend the number to 75 by year 2020 (see Figure 116). Further, since 2010, physicians have been given the right to develop group practices as limited liability companies, which is associated with small tax advantages (*Act to Strengthen Ambulatory Care*) (302).

Figure 116: 15a Agreement, Article 31 (Primary Healthcare Units)

Financing of cross-sector projects

The contracting parties agree to allocate financial resources, in accordance with the following contract provisions for financing cross-sectional projects. The projects are aimed at strengthening the provision of ambulatory care, in particular the establishment of primary care, which is primarily the responsibility of the social insurance system, as well as the establishment of multi-professional and/or interdisciplinary provision of care in the outpatient specialist care. A total of €200 million will be earmarked for these purposes for the duration of this agreement by 2020. The projects are carried out in accordance with the project-related planning decisions in the RSG and should contribute to the improvement of care and to the relief of hospitals. The aim is to realise at least 75 primary care units in primary care by the end of the terms of this agreement.

As outlined above, promising reforms have been introduced to enhance primary and outpatient care, however, further effort is required to ensure the sustainability of the healthcare sector. A range of potential options to reduce the burden on hospitals have been outlined below. These options are not necessarily mutually exclusive, and could be implemented in unison.

- **Primary healthcare units and group practices:** A total €200 million has been dedicated to the development of 75 PHUs by 2020. At this stage, it is unclear how these funds will be sourced, further, it has not been made explicit how and when those who invest and develop PHUs will be refunded for their efforts. Such an arrangement fosters uncertainty and reduces the incentive to invest in PHUs. A similar problem occurred under the Reform Pool of 2005, which outlined a commitment to funding to

improve extra- and intra-mural care, without defining specific funds for projects (303).⁷⁴ For this reason, it is recommended that it be made explicit where the €200 million is collected, and how it will be distributed to carriers.

- **Outpatient hospital departments:** Extend the number of DRGs applicable within hospital outpatient departments, so that an increasing number of procedures take place outside inpatient care.
- **System coordination:** The ELGA system to coordinate patient care is a relatively nascent initiative within Austria's healthcare system. However, further changes to the system are required to maximise its potential. For example, by collating patient records in an easy to interpret format for physicians accessing a patient's file for the first time.
- **Disease Management Programs:** At present, there exists just one national disease management program, the program for diabetics (Therapie Aktiv, 15a agreement 2008-13). In response to the rising number of multi-morbid patients, further investment in DMPs is recommended (e.g. for cancers, obstructive pulmonary disease, coronary disease, and asthma).⁷⁵ Given DMPs offer patients 'state of the art' treatment, it is advised that all physicians be required to offer such services.
- **GP training:** Postgraduate training for GPs primarily takes place in hospitals, with an additional six months required within a GP practice (Ärzteausbildungsordnung, ÄAO 2015). Although positive that young physicians (i.e. recently graduated) spend a portion of their training within a GP practice, six months is a relatively short amount of time when compared to countries such as the UK (18 months in a practice) and Australia (3 to 4 years, depending on rurality) (306–308).⁷⁶ A barrier to increasing physician time within a GP practice may arise from dual financing arrangements, given social health insurance is not provided with additional funds to cater to trainees. Therefore, we recommend that a portion of Länder funds be distributed to social health insurance to pay specifically for GP training. Enhanced GP training will improve primary care services, and therefore, in the medium- to long-term reduce hospitalisations and thus costs to the Länder. Given benefits may take a certain number of years to ensue, in the short-term, additional funds should be provided to the Länder to cover fixed costs.

⁷⁴ For inpatient and outpatient sector, 1% (2006) and 2% (2007-08) of total funding for be dedicated to programs facilitated coordination between the two sectors (304).

⁷⁵ Themes based on Germany's Disease Management Programs (305).

⁷⁶ Three years to complete a Fellowship of the Royal Australian College of General Practitioners (an option for an additional year to advance rural skills), or four years to complete a Fellowship of the Australian College of Rural and Remote Medicine.

- **GPs in outpatient care:** One full-time GP could be introduced into hospital outpatient departments to triage patient admissions. This approach has been implemented in various settings including in Deventer, a region with the Netherlands, where GPs operate hospital outpatient departments. Such efforts have already been made within Viennese hospitals.

Legal considerations

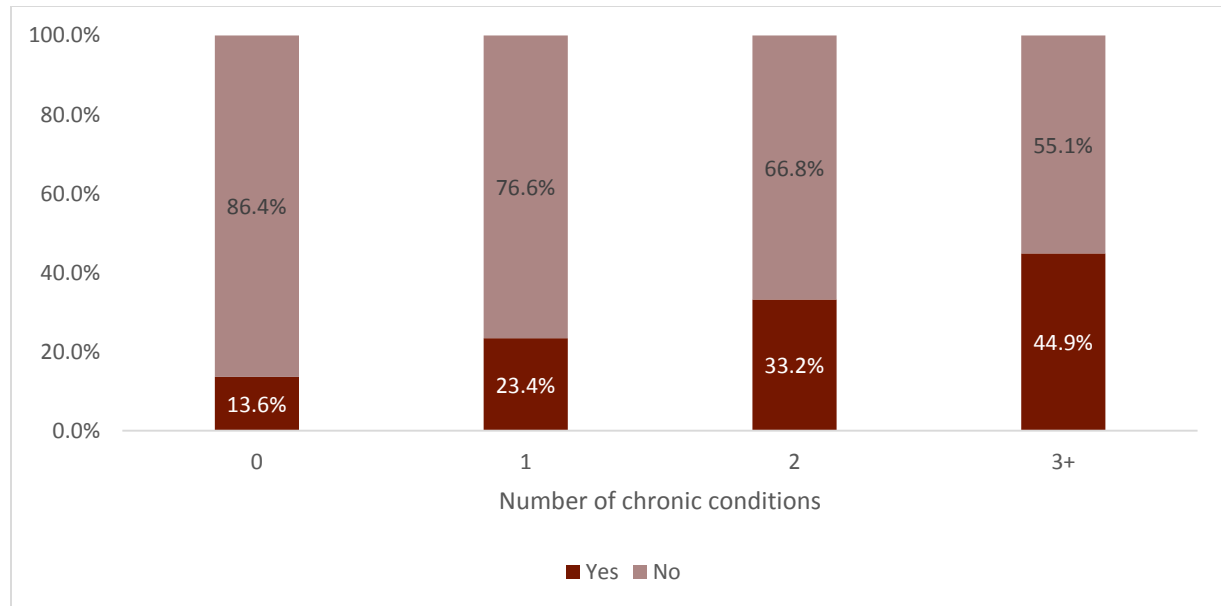
Even though no particular constitutional impediments have to be faced in this respect, a comprehensive legal assessment of consequences and issues arising from the recent reform is not possible at this stage.

Medium-term policy options

Bundled payments

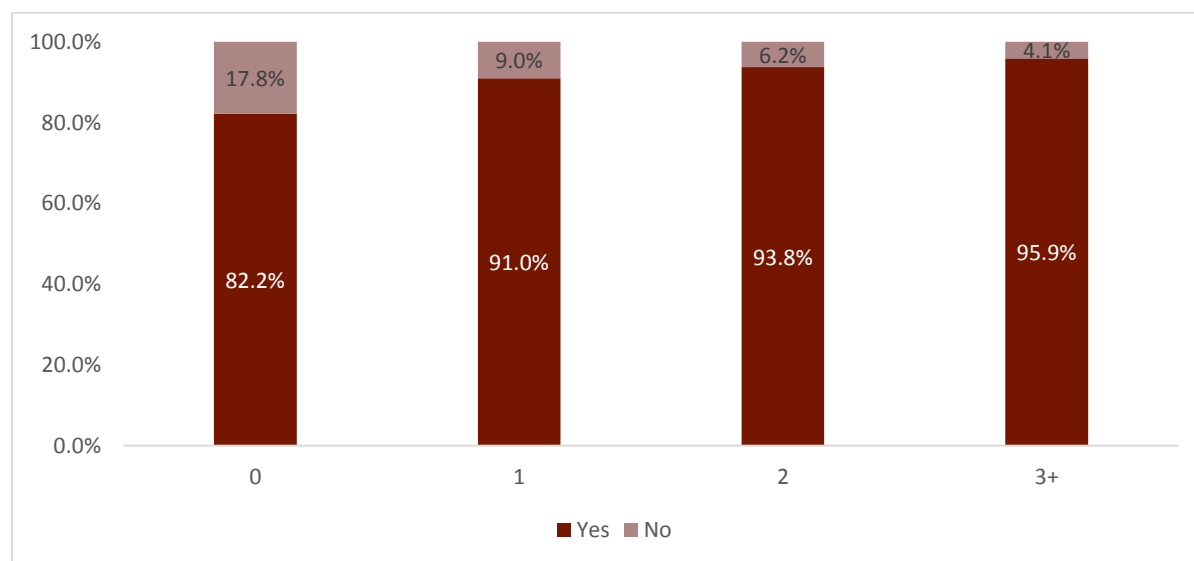
Multi-morbid patients consume a disproportionate amount of healthcare services. For example, in Austria, just under half (44.9%) of those with three or more chronic conditions access inpatient care compared to 13.6% of those with no chronic conditions (Figure 117). Similar patterns emerge at the outpatient level, where 95.9% of multi-morbid patients (i.e. three or more) see a doctor as opposed to 82.2% of healthy patients (i.e. those with no chronic conditions).

Figure 117: Probability of accessing inpatient care by number of chronic conditions in Austria (waves 1,2,4 and 5)



Source: SHARE data (Survey for health, ageing and retirement in Europe), analysis by LSE

Figure 118: Prevalence of access to doctors associated with number of chronic conditions (waves 1,2,4 and 5)



Source: SHARE data (Survey for health, ageing and retirement in Europe), analysis by LSE

To improve care, and reduce overall costs, risk-adjusted bundled payments for high-cost multi-morbid patients is recommended. Specifically, to encourage continuity of care and avoid patients ‘wandering’ through the healthcare system, joint budgets between social health insurance and the Lands would be created to cover costs across the spectrum of care (i.e. primary care, ambulatory care, hospital care and social care).

Prior to the implementation of bundled payments, a study should be commissioned to gain a better understanding of the types of multi-morbid patients in Austria (e.g. the proportion of multi-morbid patients: nearing death; with persistent chronic conditions; and short-term high need patients).

Legal considerations

Basically no constitutional impediments have to be faced in this respect. Anyhow multi-morbidity could be definitely an important risk-adjustment-factor and care for multi-morbid patients could be target for a specific fund such as the already existing ones for prevention or dental health (§§ 447h, 447i ASVG).

Rural and remote GP remuneration

Small populations in rural areas limits coverage of specialised healthcare services. To ensure insured patients in these areas receive adequate and appropriate care, it is advised that networks of specialised GPs be encouraged (e.g. specialisation in diabetes, arthritis, heart disease and other areas of care relevant to rural populations). For geographical reasons, these GPs do not need to be located within the one practice, rather, GP networks could develop robust internal referral systems.

Rural GP networks could be encouraged through changes to the current remuneration system outlined within contractual agreements. Specifically, by introducing risk-adjusted capitation payments, with elements of flat rate payments. The capitation component may incentivise physicians to move to rural areas as they will be guaranteed a certain income, thus reducing financial uncertainty. Rates for capitated budgets should take into account that, relative to urban posts, working in rural/remote areas is less desirable, involves treating more complex cases, and requires greater responsibility. Consideration could also be given to applying different rates depending on rurality, with, for example, higher capitated budgets being allocated to physicians working in poorer and/or less densely populated areas.

Flat rate payments could also be introduced to complement capitated budgets, and be linked to actions/services that promote overall improvements in care quality. For example, a once off payment for establishing a specialised GP network, in addition to bonus payments for networks which continually promote coordinated care (e.g. draw upon the French payment system, which provides physicians with additional payments related to time spent coordinating care, as well as the mix of health care professionals within a network, see section 6.2.2).

Legal considerations

No particular constitutional impediments have to be faced in this respect, but some amendments to the current system of contractual agreements would be required.

Long-term policy options

GP remuneration

A change to a fully risk-adjusted capitated payment system represents a significant cultural and organisational change as it would require patients to register up with one physician. Therefore, risk-adjusted capitation should be trialed within rural and remote areas, where natural registration occurs (i.e. due to the limited number of physicians within a certain location). Given risk-adjusted capitation in rural

and remote areas achieves its stated objectives, consideration should be given to extending this form of payment to GPs working within urban settings. Similar to rural/remote GPs, additional flat rate incentive payments could be offered to encourage better value-care, such as participation in preventative care (e.g. smoking cessation programs), or minor surgeries to reduce the number of inpatient admissions.

To 'ease in' the introduction of risk-adjusted capitation, insurees could have the option of registering with either a GP or specialist (as is the case in France, where 99% of insurees choose a GP).

Legal considerations

Even though no particular constitutional impediments have to be faced in this respect, it has to be considered that 'registering' with a certain physician would impose restriction to the patients' right to choose which physician(s) they visit.

Enhanced role of GPs

Discussions with relevant stakeholders highlighted the value placed on freedom of choice within the healthcare sector. However, in the long-term, consideration could be given to enhancing the role of GPs within contracts by assigning them responsibility for referring patients onto outpatient specialists or inpatient care. Such a move should be voluntary, further insurees could be given the option to register with a specialist, as opposed to a GP (as is the case in France, however, 99% individuals choose a GP).

Enhancing the role of GPs would follow international trends including countries such as France and Denmark (see Figure 119). It is important to highlight that models outlined in the figure below, although considered best practice, are not directly applicable to the Austrian context given low levels of user charges (thus financial incentives to encourage insurees to access their chosen GP or specialist are limited). For this reason, other policies such as appropriate marketing and advertising are required.

Figure 119: The role GPs in France and Denmark

France

The 2005 health financing reform law aimed to encourage coordinate treatment pathways by requiring patients to register with a preferred physician of their choice (GP or specialist).* Patients who access specialists** with a referral from their preferred physician pay a lower co-insurance (user charge) rate, compared to patients who access specialists directly (i.e. 30% vs 70%).

Denmark

Denmark has introduced a novel initiative to improve the appropriateness of care provided by giving patients the following two options. Under option one, which 98% of the population opt for, a referral from a GP is required if a patient wishes to seek secondary care. Registration with a GP is necessary in this circumstance. For the second option, individuals have the freedom to choose their GP as well as uninterrupted access to specialists. However, copayments are required for both GPs and specialists. In either options 1 or 2, patients must obtain a referral before accessing hospital care (with the exception of emergencies).

Source: (309–312)

Note: *The scheme is in fact not compulsory, however, the vast majority of population believe it is (i.e. 82%). **With the exception of certain low-cost specialists such as gynecologists and ophthalmologists, which patients can continue to visit directly.

This policy option should only be introduced once appropriate structures and processes have been developed within the primary care sector. For example, further education and training would be required to increase the capacity of GPs to properly triage patients to outpatient specialists or inpatient care. Further, the number of GPs would also need to increase to cope with greater levels of demand.

Finally, enhancing the role of GPs to triage patient cases will be mitigated if patients choose to access primary healthcare units, given referrals to specialists will naturally occur. Therefore, as stated throughout this report, further effort should be directed at increasing the number of PHUs and encouraging patients to use these units as their first 'point of call'.

Legal considerations

No particular legal impediments have to be faced in this respect.

Summary of policy options for contracts between physicians and social health insurers

Decisions made within contractual negotiations have a significant impact on structures, processes and outcomes within outpatient healthcare settings. For example, they play a role in determining remuneration for physicians, and what and how services are delivered.

Based on a review of contractual negotiation arrangements in Austria and across Europe, 12 associated policy options have been developed. Each policy option has been categorised into three sub-groups to reflect their relative importance.

In the short-run, it is recommended that efforts are made to: enhance the power of social health insurers during contractual negotiations; introduce robust needs-based criteria for positioning contracted doctors; harmonise services across contracted physicians; and finally, to foster an environment which enhances the role of primary and outpatient care.

Once short-term policies have been implemented, policy-makers could consider changes to remuneration packages to: a) improve care coordination for multi-morbid patients by introducing bundled payments across outpatient, inpatient and social care; and b) improve access to care in rural and remote areas through risk-adjusted capitated payments, which reflect relative difficulties associated with working in such environments (e.g. more complex cases, less support).

Finally, in the long-term, risk-adjusted capitated payments could be extended to GPs in urban settings, in addition to flat-rate payments to encourage utilisation of high-value care. Concurrently, the role of GPs could be enhanced by requiring patients to obtain a referral before seeking specialist care.

6.4 Healthcare quality

6.4.1 Measuring health system performance

Rising demand for healthcare services, constrained resources and variations in healthcare provision have led to an increased interest from governments to measure and monitor healthcare quality. As a result, an increasing number of countries have implemented performance measurement and quality improvement tools (313).

Performance measurement within the healthcare sector aims to ‘monitor, evaluate and communicate’ the extent to which health care systems meet pre-defined objectives (314). Performance is often measured through the development and implementation of targets that provide a robust picture of the healthcare system of interest (314). Targets are considered a desirable tool for both policy makers and the population, as they express a clear commitment to a specific goal within a set timeframe (314).

Modern economies are increasingly concerned with measuring the quality of healthcare provided. The growth in quality and performance measurement can be traced back to the World Health Organisation’s

(WHO) 1981 report – *Health For All*, which specified that targets are a useful tool to improve health outcomes (314). Other factors that have contributed to the rise in the use of performance measurements include demand side changes such as, cost-containment, increasing patient expectations and demand for accountability, as well as improvements in technology, which have made collecting information more effective and efficient (314).

6.4.2 Defining healthcare quality

To measure the quality of healthcare, a robust definition of what constitutes ‘quality in healthcare’ is required. To date, several definitions of quality in healthcare have been developed, which differ across the lens in which the healthcare system is viewed (313,315,316). The most common definition comes from the Institute of Medicine (IOM) (US) which describes the term as ‘the degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge’ (199). This is a high-level definition of healthcare quality, for this reason, researchers have broken down the concept down into domains. The OECD defined 10 dimensions of healthcare quality within their ‘Health Care Quality Indicators Project’, of most importance (or the most commonly cited dimensions) are those that overlap with IOM’s dimensions, which are outlined in Table 72 below (3).

Table 72: Healthcare quality domains

Dimension	Definition
Effectiveness	Providing care processes and achieving outcomes which are supported by scientific evidence.
Efficiency	Maximising a unit of health delivered (or health benefit) for a given unit of healthcare resource used (i.e. getting the most output with a given level of input).
Equity	Providing healthcare of equal quality to individuals regardless of personal characteristics (other than preferences for care or clinical conditions).

Dimension	Definition
Patient centeredness	Meeting the needs and preferences of patients and providing education and support.
Safety	Patient bodily harm (actual of potential).
Timeliness	Accessing care in a timely manner with minimal delays.

Source: (317)

Note: Additional indicators stated by OECD are acceptability, accessibility, capacity, appropriateness, capability, continuity, and sustainability (318).

6.4.3 Measuring healthcare quality

Upon defining healthcare quality, a robust conceptual framework in which to measure healthcare performance is required. Such a framework ensures that all relevant areas of health system performance are measured, that healthcare priorities are identified, and lastly, that collection and analysis of data is neither misdirected nor duplicated (314).

Typically, healthcare performance is measured using indicators, which as outlined by Campbell *et al.* (2002), are explicitly defined, measurable items that allow policy-makers to assess the provision of healthcare (319). Historically, the literature and empirical evidence on quality indicators have focused on hospital care, however are today increasingly expanding into primary care services (319).

Indicator typologies

In his seminal 1996 paper, Donabedian developed a framework for measuring the quality of healthcare by grouping indicators into the following categories – structure, process and outcome (320).

Structure measures refer to the resources needed to provide care and relate to healthcare settings, such as personnel, equipment, or facilities (321). *Process* measures focus on how consistently or comprehensively healthcare providers follow a set of procedures or guidelines that outline best practice. Further, they focus on how care is delivered; however, they must be associated with health system outcomes (e.g. appropriate prescribing). This reinforces the idea that a provider has followed ‘best practice’, which may increase positive health outcomes. Lastly, *outcome* measures attempt to correlate medical care to optimum patient health status. Outcome measures monitor the effect of treatment and

can review patient experience in addition to physical health (321). Outcomes can be challenging to measure as numerous factors determine patient health status and are often out of the provider or health system’s control. Typically, outcome measures are used within secondary care (i.e. inpatient care) given indicators are more readily available in this area (e.g. 30-day mortality) (321). Outcome measures are less common within outpatient care (e.g. GP practices) (322). Despite there being a separate category for outcome measures, high quality care can only be achieved with appropriate structures and processes.

Risks and benefits of indicators

Using indicators to measure and monitor health system performance can lead to a range of benefits. However, caution should be taken when designing relevant structure, process and outcome indicators, given there are a number of associated risks which may result in adverse health outcomes. The risks and benefits of using indicators to measure performance are outlined in the table below.

Table 73: Risks and benefits associated with measuring health system performance

Risks	Benefits
<ul style="list-style-type: none"> • May encourage fragmented rather than a holistic approach to care • May not cover all aspects relevant to measuring healthcare quality • May require data that is not readily available or is of low quality • May lead to provider backlash, if not developed in collaboration with the medical community • May not be cost-effective if designed poorly • Can lead to ‘cream skimming’ (choosing healthier patients) or cost-shifting • Can encourage a culture of blame and erode a provider’s internal motivation • Can distract providers from providing optimal care 	<ul style="list-style-type: none"> • Documents the quality of healthcare provision • Compares the performance of healthcare providers offering the same service/product (i.e. benchmarking) • Measures the performance of healthcare providers over time and thus establish trends (particularly relevant when evaluating the impact of a new policy) • Identifies areas of priority within the healthcare system, which assists in allocating resources appropriately • Holds healthcare providers accountable for their performance, which if made publically available, can assist the patient’s choice of provider.

Risks	Benefits
<ul style="list-style-type: none"> • Can incorrectly attribute health outcomes to providers • Can encourage data manipulation • Indicators cannot cover all important aspects of healthcare quality and thus cover only a minority of clinical activity. 	

Source: (323–325)

Best practice in designing indicators

A number of authors have developed best practice principles to guide policy-makers in developing healthcare indicators that minimise the risks outlined (see table below) (314,319,326). For the purpose of this paper, a summary of characteristics of good performance indicators has been drawn from Campbell *et al.* (2002), given these principles are based on primary care, which is the focus of this review (319).

Campbell *et al.* (2002) outlined seven characteristics that define a good healthcare performance indicator, namely: content validity, reproducibility, acceptability, feasibility, reliability, sensitivity, and predictive validity (see table below) (314,319). Despite these characteristics, the authors recognise that producing an ‘error free’ measure of quality may not be possible, however, to the extent possible, these characteristics should be adhered to (319).

Table 74: Indicator characteristics

Indicator characteristic	Description
Content validity	The indicator should accurately represent what it is trying to measure/assess.
Acceptability	Indicators should be accepted by both those who are being assessed as well as those who undertaken the assessment (e.g. indicators should be developed in collaboration with the medical community and patients).

Indicator characteristic	Description
Feasibility	Indicators should be valid, reliable and be measured using consistent and available data.
Reliability	Results from indicators should be associated with minimal measurement error, further, they should be easily reproducible across providers.
Sensitivity	The indicator should be able to detect changes in the quality of healthcare.
Predictive validity	The indicator should be able to detect quality of care outcomes.
Reproducibility	The indicator should yield the same result if the method was applied repeatedly.

Source: (319)

6.4.4 Uses of performance measurement

Once data on performance measurement has been collected, the next consideration is what to do with the available data. The two most widely advocated strategies to promote high-quality are reporting of performance and pay-for-performance. The former aims to stimulate interest in quality among healthcare providers, while the latter incentivises quality improvement by financially rewarding/penalising providers (327).

Reporting

Public reporting

Public reporting has two key objectives. First, to stimulate quality improvement by assisting patients in choosing top performing providers and identifying providers that are underperforming. And second, to increase transparency and hold individual healthcare providers, hospitals, or physician practices accountable (328).

Public reporting can focus on reviewing healthcare practices or individual physicians. Research has shown that hospital level public reporting increases quality improvement activities (314). According to Shekelle and colleagues, hospitals were more likely to implement quality measures after the release of performance data (2009). However, the positive impacts are relatively small (329). There is minimal evidence of the impact reporting has on quality at the primary care level.

Reviews of individual providers can be posted publicly. Provider performance can also be relatively ranked in comparison to their peers. This may inspire competition and lead to positive results, but may create conflict in the workplace. Additionally, articles speculate that public reporting may lead to adverse consequences, such as provider reluctance to operate on high risk patients or distort clinical priorities (329–333).

Professional improvement reporting

Reporting can also take place at the healthcare provider or individual physician level as a means to improve service provision. This type of reporting allows healthcare providers to compare their performance against peers, at either the regional, national or international level.

The debate on whether provider level performance should be made public or not is widely contested. However, literature on the topic reveals that performance measurement schemes should be ‘designed and owned’ by health professionals who in fact use the system (314).

Reporting targeted at professional improvement is primarily within the form of quality registers, where data is collected on behalf of providers who share results to a register. Such systems are popular within Scandinavian countries, such as Sweden and Norway (314).

Impact of reporting

Various studies evaluating the impact reporting schemes have on healthcare quality have been undertaken. Similar to P4P, consensus on the impact of reporting on healthcare quality has not been reached with studies finding both positive, neutral and negative effects (334,335). Proponents of public reporting highlight the impact it has on physician motivation, however, there is limited evidence to suggest that physician motivation and thus patient outcomes improve (335). Critics, on the other hand, point to the range of negative side effects that can occur from reporting, specifically:

- Limited accuracy and reliability of information
- High costs associated with collecting and analysing quality data

- Gaming among physicians, for example by refusing to care for chronically ill patients
- Misinterpretation of data among patients (334).

International case studies: Reporting

Examples of healthcare reporting in Sweden and Canada have been outlined below. Both systems have been recognised by the OECD as ‘best practice’ given the depth of data and availability.

Sweden

The National Board of Health and Welfare (hereafter, the National Board) is a government agency within Sweden’s Ministry of Health and Social Affairs (336). The role of the National Board is to monitor and evaluate Sweden’s healthcare and social services. As part of this role, the National board develops healthcare quality indicators as a way to measure the performance of care being delivered (336). Data for each of these indicators is summarised within National Quality Registers (NQRs), which are initiated and led by healthcare professionals (337). Sweden’s NQRs include a range of information such as:

- Patient demographics
- Provider organisation characteristics
- Structure of care
- Process of care (including patient-reported experience measures (PREMS))
- Outcomes of care (including patient-reported outcomes measures PROMS)) (337).⁷⁷

As of 2016, there were 96 NQRs covering 15 disease groups, which have been outlined in Table 75 below (338). Certain indicators receive ‘national status’ and are therefore made publically available online (today, results from over 800 indicators are made publically available) (339). Depending on the quality of data collected, results for each indicator may be published at the regional, county-city or healthcare provider unit level. For example, each year the National Board, in collaboration with the SALAR (Swedish Association of Local Authorities and Regions), releases a ‘Quality and Efficiency in Swedish Health Care – Regional Comparisons’ report, which publishes results from a range of indicators across Sweden’s 21 counties (339). The Regional Comparison reports do not analyse why differences across counties occur or provide specific policy recommendations; this is seen as the responsibility policy makers at the regional level (339).

⁷⁷ The structure, process and outcome indicators cover both inpatient and specialist outpatient care.

There are three goals associated with publishing comparative healthcare data across counties: 1) to make publically financed healthcare systems more transparent and accountable; 2) to advance healthcare management and control by identifying satisfactory and unsatisfactory outcomes, which serve as the basis for implementing change (i.e. identifying areas of need and best practice); and, 3) to promote quality and availability of data relating to healthcare performance outcomes (i.e. encourages the collection of up-to-date, nationwide, robust data) (340).

A unique feature of Sweden’s NQRs is the use of unique patient identifiers, which are based on individual social security numbers. By including a patient identifier, data from different quality registers can be linked, which provides a more robust picture of the type of care a patient receives (339,340).

Lastly, despite being an asset for Sweden’s healthcare system, NQRs, in their current form, have certain limitations. Firstly, indicators within the NQRs are focused on hospital care and thus do not adequately cover primary or social care. Secondly, indicators do not capture the quality of on-going care, given indicators are clinically focused with well-defined beginning and end points. And thirdly, heterogeneity among data collection processes is inefficient, however, work is being undertaken to create a streamlined, automated approach data collection (340).

Table 75: NQR disease groups in Sweden

Disease groups within Sweden’s NQRs	
• Cancer	• Circulatory
• Dental care	• Elderly palliative care
• Emergency, anaesthesia and intensive care	• Endocrine organs
• Eyes	• Infection
• Lung diseases	• Musculoskeletal system
• Psychiatry	• Nervous system
• Paediatrics, obstetrics and gynaecology	• Stomach and intestines
• Other areas	

Source: (338)

In-depth analyses of certain disease groups are published online within ‘National Performance Assessments’. For example, recent National Assessment reports have covered diabetes (2014), musculoskeletal disease (2014) and stroke (2011). Typically, National Assessments cover 20-60 national-

guideline specific indicators relevant to the disease group under assessment (339). Results from the indicators are reported at the national, regional, county-council and healthcare unit level, and are also disaggregated by age, gender and socio-economic status. Unlike Regional Comparison reports, the National Board provides recommendations on where policy-makers can make improvements based on findings from the data (339).

In addition to Regional Comparison and National Assessment reports, each NQR publish annual reports within their specific field, as do a number of patient organisations and foundations (339).

Canada

The OECD have recognised Canada as an example of best practice example in terms of publically reporting on healthcare performance (341). Specifically, the OECD reference The Canadian Institute of Health Information's (an independent, not-for-profit cooperation focused on disseminating quality health information) *Your Health System* initiative as a model of healthcare reporting to be followed (341).

The online website, which is available to all, can be broken down into two key segments: 'In Brief' and 'In Depth'. The former, classified indicators as relating to either 'access', 'quality of care', 'spending', 'health promotion and disease prevention', and 'health outcomes' (see Table 76) (342). These groups were used as they were assessed as being of most importance to Canadians.

Data on each of the above indicators are reported at the national, and province and territory level. Results at the province and territory level are recorded as performing above, same or below average, which is benchmarked against the national average. Trends within and across regions is also available (342).

The *In Depth* section covers 37 nuanced indicators covering safety, health status, social determinants, person centeredness, appropriateness and effectiveness, and efficiency. The section also includes details on health service resourcing and activity. Performance against these indicators can be benchmarked at the province, territory, region, city of hospital level (341).

The [online platform](https://yourhealthsystem.cihi.ca/hsp/inbrief?lang=en)⁷⁸ is designed for the 'lay' viewer and is thus interactive and user-friendly.

⁷⁸ See: <https://yourhealthsystem.cihi.ca/hsp/inbrief?lang=en>

Table 76: CIHI's In Brief indicators

Indicator classification	Types of indicators
Access	<ul style="list-style-type: none"> • Access to a regular doctor • Specialist waiting times • Radiation treatment waiting times • Joint replacement waiting times
Quality of care	<ul style="list-style-type: none"> • Readmission rates to hospitals • Hospital deaths • Repeat hospital stays • Inappropriate use of antipsychotics in long-term care
Spending	<ul style="list-style-type: none"> • Age-adjusted public spending per person • Cost of a standard hospital stay
Health promotion and disease prevention	<ul style="list-style-type: none"> • Obesity rates • Smoking rates
Health outcomes	<ul style="list-style-type: none"> • Life expectancy at birth • Avoidable deaths • Children vulnerable in areas of early development

Source: (342)

Pay-for-performance

Despite strong intrinsic motivation, clinicians, like other professionals, respond to financial incentives. This is evident from the rise in pay-for-performance (P4P), which is being increasingly used in conjunction with other forms of payment, such as capitation and fee-for-service.

The academic and grey literature have provided numerous definitions of P4P (269,343). Partel (2014) describes P4P as using 'financial incentives, and sometimes disincentives, to encourage health services to behave in certain ways when undertaking certain activities, such as clinical care and resources used' (344). In simpler terms, the Agency for Healthcare Research and Quality (AHRQ) (US) defines P4P as 'paying more for good performance on quality measures' (345). Despite various definitions, at a basic-level P4P

represents payments to healthcare providers that are contingent on performance, which is defined through a set of pre-defined quality measures.

Advantages and disadvantages of P4P

P4P models were introduced as a tool to overcome the shortcomings associated with traditional payment methods such as fee-for-service and capitation. Empirical evidence supporting the impact of P4P on the delivery of quality healthcare is available, however, in developed countries it is minimal. For example, studies which find a positive association between quality/health outcomes and P4P note that improvements are modest and may be misleading given poor methodological evaluation design. For example, Eijkenaar *et al.* (2012) undertook a systematic review of systematic reviews regarding the effectiveness of P4P programs and found that, in general, improvements in performance were modest (272). Further, Scott *et al.* (2011) in their summary of primary care P4P programs noted only one of the various indicators within each program had a statistically significant positive impact, meaning that the authors could not say with confidence that P4P had an impact on the remaining indicators (346). Further advantages and disadvantages of P4P schemes is provided in Table 77.

Table 77: Advantages and disadvantages of P4P

Impact	Advantage/disadvantage	Explanation
Quality of care and health outcomes	Advantage	A number of studies in recent years have shown statistically significant improvements in healthcare quality and patient outcomes as a result of P4P.
Spillover effects	Advantage	Positive impacts on non-incentivized healthcare measures.
Gaming and risk selection	Disadvantage	Physicians have been shown to 'game' the system, for example by selecting healthier patients.

Impact	Advantage/disadvantage	Explanation
Physician motivation	Disadvantage	Financial rewards can have a negative impact on individual intrinsic motivation.
Quality of care	Disadvantage	P4P can lead to poor quality care (e.g. resentment towards recalcitrant patients).
Attribution	Disadvantage	Difficulties associated with attributing improved quality/health outcomes to P4P.

Note: (319,347–352)

International case studies: Outpatient P4P programs

Compared to the inpatient sector, P4P programs at the primary/outpatient level are limited. Nevertheless, this section outlines three prominent P4P programs locating in the UK, Australia and Germany.

Table 78: P4P country examples

Program (country)	name	Performance domains	Incentive design	Funder/funding
Quality and Outcomes Framework (UK)		Process Clinical Outcome	Financial, absolute rewards are paid to GP practices (yearly) and are determined by a points-based system. Financial rewards comprise between 20-25% of GP income.	NHS Primary Care Trusts, Health Boards (Scotland), Regional Boards in Northern Ireland and Local Health Boards in Wales.

Program (country)	name	Performance domains	Incentive design	Funder/funding
Practice Program (Australia)	Incentive	Process Clinical	Financial, absolute incentives are paid quarterly to GP practices. Financial rewards comprise between 4-10% of GP income. GP practices are required to provide progress reports and aged milestones.	Australian Government
Disease Management Program (Germany)	Management	Documentation Service Coverage	Flat rate payments Bonuses per patient treated. Patients incentivised through waived co-payments and reduced medicine costs.	German SHI system
France		Largely indicators process	Additional flat rate payments when a target has been achieved (points-based system).	Social health insurer

United Kingdom

In 2004, the UK Government introduced the Quality and Outcomes Framework (QoF) to reward GP practices for providing high-quality care. Although the QoF is voluntary, nearly all UK practices (99%) participate in the program (353).

The QoF is comprised of 81 indicators each attached to one of three health domains (areas of interest), namely, clinical, public health, and public health (additional services). Within each of these domains are a range of clinical areas.

QoF indicators are focused on improving quality of care via:

- Process measures (e.g. the percentage of patients with cancer diagnosed within the preceding 15 months, who have a patient review recorded as occurring within six months of the contractor receiving confirmation of diagnosis)
- Clinical outcomes (e.g. the percentage of patients with coronary heart disease in whom the last blood pressure reading is 150/90 mmHG less) (354).

GP practices are provided with financial rewards depending on the number of points they obtain. Points are rewarded based on a GP's adherence with an indicator. As of 2014-15, each GP practice could achieve up to 559 points, with a higher score translating into a greater financial reward (355). As of 2014-15, one point equated to £160.15,⁷⁹ with the final payment being adjusted for surgery workload, local demographics, and prevalence of chronic conditions in the local area (NHS Employers, 2016). In 2014-15, the average score for a GP practice was 529.6, with obesity and epilepsy clinical areas performing the best (356). Further details can be found in the table below.

Table 79: QoF areas of interest, clinical areas and maximum points awarded

Area of interest	Number indicators /achievement measures	of clinical areas ^a	of Example areas	clinical	Maximum points GPs can obtain
Clinical	65	19	<ul style="list-style-type: none"> • Chronic kidney disease • Heart failure • Hypertension 		435
Public Health	7	4	<ul style="list-style-type: none"> • Blood pressure • Cardiovascular disease 		97

⁷⁹ This represents the payment in England. Different payments are made in Wales, Scotland and Northern Ireland.

Area of interest	Number of indicators /achievement measures	of clinical areas ^a	of Example areas	clinical	Maximum points GPs can obtain
Public Health – additional services	5	2	<ul style="list-style-type: none"> • Cervical screening • Contraception 		27

Source: (356). Note: ^aEach of the indicators fits within one of the clinical areas.

As a proportion of total income, QoF provides GPs with a high level of additional income relative to other incentive schemes. For example, in 2005-06 the average additional income awarded to GP practices from QoF was £126,000, which when split across GPs, comprises approximately 20% of total GP income. Similar proportions continue to exist today (353).

A systematic review of the literature regarding the impact of the QoF has recently been undertaken⁸⁰ by Mandavia *et al.* (2017). Of the 21 articles used as part of the study, seven found a positive effect, 13 found intermediate effects and one had no effect.

Australia

The Australian Government introduced financial incentives into primary care in 1996 under the Better Practice Program. In 1998, the program was superseded by the Practice Incentives Program (PIP).

As of 2011, Medicare data found that 68% of GPs in Australia were registered for the PIP, however, this does not mean that all those who are registered receive payments. For example, the *Medicine in Australia: Balancing Employment and Life (MABEL)* survey found that in 2010-11 only 43% of GPs received an incentive payment. This represents a decrease from approximately 47% in 2008-09 (357).

Financial incentives are based on GP practices adherence to a range of indicators within the 11 clinical areas of interest. The payments are made quarterly to GP practices and are absolute in measurement (i.e. rewards are not based on performance relative to other practices) (358).

Incentive payments from PIP are part of a broader payment system for GPs, which also includes fee-for-service income. In general, incentive payments make up a small proportion of GPs overall income. For

⁸⁰ Working Paper.

example, in 2008-09 PIP payments represented between 3.8% and 10.3% of GP income in capital cities and rural areas, respectively (359).

Germany

Increasing healthcare costs and fragmented coordination of care led to the creation of the Disease Management Programs (DMPs) in 2001. The DMP strives to improve quality and coordination of care in order to reduce costly complications and hospitalisations associated with complex medical conditions. Health funds were originally reimbursed by the Risk Compensation Structure (RCS) on per capita basis and adjusted by age and gender; however, this financing mechanism led to cream skimming and no incentive for physicians to treat the sickest patients, or to provide high quality of care (360). Sickness funds implemented 10,618 DMPs across all disease areas as of 2012 and six million people were covered (360).

The DMP first focused on diabetes, breast cancer, obstructive pulmonary disease, and coronary disease (360). These were proposed by the Joint Federal Commission, which is a group of physicians, representatives from sickness funds, and the German Hospital Organisation. Disease specific committees were also formed to create evidence based guidelines (360). These guidelines were verified by the Agency for Quality in Medicine and the Institute for Quality and Efficiency in Healthcare (361).

Sickness funds have freedom in interpreting and designing their DMPs, but they must follow specific guidelines. These guidelines specify the patient enrolment process, evidence based treatment, feedback to patients and providers, education to patients and providers, electronic record documentation, and quality assurance and evaluation (361). DMP programs have the following performance domains – documentation, follow-up of patients, additional services, and training. There are 10 indicators that are measured and rewards are absolute. These incentives are distributed as a flat-rate, additional payments per enrolled patient, per indicator met, and per service provided to enrolled patients (362).

Sickness funds receive flat rate payments as incentives based on the creation of DMPs and patient enrollment (360). Physicians are reimbursed directly related to the costs of providing education and coordinating patient care. Physicians also receive additional remuneration for the provision of DMP services in the form of lump sums per patient. According to Stock *et al.* (2011), physicians receive referral financial incentives per case if they send patients to a chronic disease specialist. Financial payments vary by region. Chronically ill patients are also incentivised to seek treatment through waived co-payments, reduced medicine costs, and payment exemptions from physical therapy (361).

France⁸¹

Pilot P4P programs were initially introduced into France's ambulatory care sector in 2009. The original P4P model included a small number of indicators, which were divided into one of the following groups: prevention, chronic disease management, and drug prescription efficiency. All but one of the indicators were directly calculated by the sickness funds based on claims, and thus, did not require additional data to be collected from GPs. In its initial phase, the P4P scheme awarded GPs, on average, €3,000 per year (with a maximum of €5,600).

P4P was initially met with hostility from: the physicians' union as P4P arrangements were implemented in individual, voluntary contracts; the drug industry, given the inclusion of efficient prescribing targets; and from various other institutions due to the mix of quality and efficiency indicators. Despite these objections, 40% of all GPs signed up to P4P.

In 2011, the physicians' union and sickness funds agreed to introduce P4P into general contracts as a core component of GP remuneration. The scheme included all original indicators, in addition to a dimension on practice organisation, as well as separate P4P indicators for cardiologists and gastroenterologists in private practice.

An overview of current indicators, which were jointly developed between sickness funds and the physician's union is outlined below and have been grouped into the following categories: management of chronic diseases; prevention; and efficiency. Similar to international arrangements, the majority of indicators are process related.

*Table 80: French P4P indicators – management of chronic disease*⁸²

Theme	Indicator	Target
Diabetes	% patients with 2 or more HbA1C tests process	>= 93 %
	% patients with eye exam process	>= 77 %
	% patients with follow-up of the renal function (specific exams) process	>= 61 %

⁸¹ Information sourced directly from IEC member, Ms. Polton.

⁸² Ibid.

Theme	Indicator	Target
	% patients with foot examination process	>= 95 %
Health technology assessments	% patients with follow-up of the renal function (specific exams) process	>= 14 %
Cardiovascular risk	% patients assessed with a scoring tool process	>= 95 %
	% patients with coronary heart disease or peripheral vascular disease under treatment with ACE inhibitors or angiotensin II receptor antagonists	>= 61 %
	% patients under vitamin K antagonist treatment with dosages of INR >= 10	>= 95 %

Table 81: French P4P indicators – health prevention

Theme	Indicator	Target
Flu	% Patients 65 and over immunized	>=75%
	% patients >= 65 with a severe disease or a respiratory disease immunized	>=75%
Cancer screening	% patients 50 to 74 years old participating in breast cancer screening	>=80%
	% patients 25 to 65 years old with a Pap smears in the last 3 years	>=80%
	% patients 50 to 74 years old with a colorectal cancer screening in the last 2 years	>=70%
Iatrogenic risk	% patients with a benzodiazepine anxiolytics treatment > 12 weeks	

Theme	Indicator	Target
	% patients with a benzodiazepine hypnotics treatment > 4 weeks	<=24%
	% patients 75 and older (or 65 and older with a severe disease) with no psychiatric disorder having a prescription of 2 or more psychotropic drugs	0%
Antibiotics	Number of antibiotic treatments for patients 16 to 65 years old without any severe disease	14
	% patients 16 and over treated by antibiotics generating the most resistance	<=27%
Addiction	% smoking patients with a brief intervention (recommended in the HAS guidelines) recorded	>=75%
	% alcoholic patients with a brief intervention (recommended in the HAS guidelines) recorded	>=75%

Table 82: French P4P indicators – efficient prescription

Theme	Indicator	Target
Generic prescription	% prescription of generic statins	>=97%
	% prescription of anti-hypertensive drugs (some classes)	>=92%
	% prescription of generic urinary incontinence treatments	>=94%
	% prescription of generic asthma treatments	>=86%
	Global generic index	

Theme	Indicator	Target
Prescription of biosimilars	Prescription of biosimilars for insulin	>=20%
Efficient prescription	% low dose aspirin among platelet inhibitors	>=94%
	% type II diabetic patients treated by metformin	>=93%
	% patients with thyroid hormones dosage with TSH dosage only	>=99%

6.4.5 Measuring quality of healthcare within Austria

Managing healthcare quality

Table 83 builds upon Schmidt *et al.* (2012) by outlining, at a high-level, key policies to improve quality management within the Austrian healthcare system over the past 20 years (363). In addition, notable quality programs have also been included.

Salient changes to the way quality in healthcare is managed in Austria can be found below:

- The *Federal Health Quality Act (Gesundheitsqualitätsgesetz)* (2005): The objective of this Act was to intensify efforts to systematically manage quality of healthcare in Austria. Efforts to improve quality management, as stated within the Act, should consider patient orientation, transparency, patient safety and sustainability.
- *Health Care Structure Plans* (2006): As part of the 2005 Healthcare Reform, integrated health care structure plans were introduced at the federal (ÖSG) and regional level (Regionaler Strukturplan Gesundheit, RSG). The federal structure plan functions as a template for RSG plans, which are implemented according to the Länder configuration (agreement under article 15a). In short, the federal structure plan outlines capacity planning in the following areas: inpatient care, outpatient care, rehabilitation, biomedical equipment, and the interface of health and long-term care. Further, the structure plan includes guidelines related to structural quality standards and their implementation (363,364). At the regional level, requirements, as outlined by the federal structure plan, are implemented through the RSGs (between the Lands and social health insurance), which take into account the needs of individuals in each Land (363).

- *Federal Institute for Quality in the Healthcare Systems* (Bundesinstitut für Qualität im Gesundheitswesen, BIQG): the Health Quality Act (2005, §9) led to the development of BIQG, which sits within GÖG and cooperates with various stakeholders including social insurance, federal and regional governments, professional societies, chambers and professional representations, and patient advocacy and support groups. BIQG specialises in healthcare quality, and on behalf of the Federal Government develops, implements and regularly evaluates a nationwide quality system based on the mandatory principles of patient centeredness, transparency, effectiveness and efficiency (304,365).
- *Austrian Society for Quality Assurance and Quality Management in Medicine* (Österreichische Gesellschaft für Qualitätssicherung und –management in der Medizin GmbH, ÖQMed): In 2006, the Chamber of Physicians established ÖQMed, which includes representatives from the Federal Ministry of Health and Women’s Affairs, GÖG, HVSV, social security institutions, Chamber of Physicians, academics, and the patient ombudsman. ÖQMed is tasked with developing and conducting the self-evaluation for physician practices.
- The ÖQMed acts as a Scientific Advisory Board which provides recommendations regarding how best to measure and monitor the quality of care provided by contracted and non-contracted physicians working within the outpatient sector. Each year ÖQMed publishes a Medical Quality Report outlining results from self-administered physician questionnaires (discussed in further detail in this section) (365).
- *National Quality Strategy* (2010): (366). As a result of the Federal Health Quality Act, in 2010, the Austrian Federal Health Commission assigned the Working Group on Quality to develop a nation-wide quality strategy. The strategy, which was developed by government, social health insurance and providers, was later agreed by the Federal Health Commission (BGK). Technically, the objectives of the strategy are binding, in practice, however, this is not the case (363,367). Similar to the Act, the strategy focuses on areas such as patient orientation, safety, equity, effectiveness, and cooperation and coordination (367).
- *Austrian Inpatient Quality Indicators* (2011): In 2011, the Federal Health Agency implemented A-IQI as a way to measure quality of care within hospitals. A-IQI, which is based on the German model, was first implemented in Lower Austria and later expanded to all Lands. Today, the A-IQI is explicitly stated in the law, therefore it is compulsory for all hospitals to record data against each of the indicators (368). Aligning outpatient indicators were introduced in 2013, however, this initiative is at an infancy stage.

- Target control health (Zielsteuerung Gesundheit) (2013):* Target Control Health is a target-based, coordinated and cooperative control system involving social insurance, and federal and state governments. The primary instrument within Target Control Health is the Federal Target Control Agreement (Bundeszielsteuerungsvertrag, B-ZV), which was concluded in June 2013, and the Länder Target Control Agreements (*Landeszielsteuerungsverträge*) on the level of the states. One of the key objectives of the B-ZV agreement was to implement uniform federal quality management systems in hospitals and private practice, and to coordinate systems with the outpatient sector. In terms of structure, as part of the 2013 reform, the Federal Target Control Commission (*Bundeszielsteuerungskommission, BZK*), was established as a second body in the Federal Health Agency, which took over responsibilities once held by the Federal Health Commission (*Bundesgesundheitskommission, BGK*) (established in 2004-05). The BZK is comprised of 17 representatives from federal government (four), regional government (nine) and social health insurance (four). Under the supervision by the BZK, sits the Coordinating Committee (Ständiger Koordinierungsausschuss), who in turn oversees four professional working groups covering e-health, public health, supply processes (which includes the quality strategy) and supply structure. Each of these professional groups can undertake work in-house or commission projects to another organisation (e.g. the BIQG in regard to the Quality working group). In addition, there are State Target Control Commissions (Landszielsteuerungskommission, LZV) across each of the Länder, each comprising 11 representatives from federal government (one), regional government (five) and social health insurance (five). The Federal and State Target Control Commissions are aligned, in that targets developed at the federal level are implemented at the state level, which take into account local conditions. Responsibility for monitoring targets lies with GÖG. A new Federal Target Control Agreement was recently implement, which covers the period 2017-21.
- Federal health targets:* Under the healthcare reform (2013), 10 over-arching (framework) health related targets were developed and adopted by the Council of Ministers and the Federal Health Commission. The 10 health targets were based on a number of guiding principles including ‘orientation towards health determinants’, ‘health in all policies’, and ‘promoting health equity’. Together, the targets aim to increase the number of healthy life years by two between 2012 and 2032. The above targets are broad, therefore a number of sub-targets (*Wirkungsziele*) and aligning indicators have been developed. Most performance indicators are monitored by GÖG, with results being made publically available (annual). It is recognised that the 10th Federal Health Target (‘to secure

sustainable and efficient healthcare services of high quality for all') aligns and complements Target Control Health (369).

In regard to quality initiatives, the following two examples may be considered the most important. First, introduction of a diabetes disease management program (Therapie Aktiv) (2007-08), and secondly, the introduction of primary healthcare units (PHUs) as part of the 2013 healthcare form.

Table 83: Healthcare quality management and major quality projects in Austria since 1997

Year	Milestones		Objectives
	<i>Federal level</i>	<i>Länder level</i>	
1997	DRG-based hospital financing		Improve efficiency
2004/05	Federal Health Agency introduced Federal Health Commission established Introduction of e-card (SHI) Possibility to create Federal quality directives and Federal quality guidelines	State health Funds established Regional Health Platforms established ‘ Reform Pool ’ to coordinate inpatient and outpatient care	Improved collaboration between Federal and Länder governments Better integration between in- and out-patient care Better patient pathways
2006	Austrian Health Care Structure Plan for integrated care introduced Federal Institute for Quality in the Healthcare Systems (BIQG) established as part of Healthy Austria Ltd., and located with GÖG Austrian Association of Quality Assurance and Management (ÖQMed) within the Chamber of Physicians	Regional Health Care Structure Plans introduced	Capacity planning and quality management guidance Implementation of national quality standards Outpatient quality management
2007/08	Austrian Health Care Structure Plan for 2008 launched Introduction of the diabetes disease management program (Therapie Aktiv)	Amendment of Regional Health Care Structure Plans	Capacity planning based on volumes and activities Capacity planning for all of health and social care Improve treatment of diabetic patients
2009	HTA Strategy launched by BIQG First Federal quality guideline for diabetes introduced Reporting & Learning system made available online by ÖQMed Quality survey on outpatient care published by ÖQMed		Improve transparency, patient safety and patient pathways

Year	Milestones	Objectives
	Introduction of ELGA to coordinate patient electronic health records	
2010	<p>National Quality Strategy published by the Federal Health Commission</p> <p>Online quality reporting platform launched by BIQG</p> <p>Meta guidelines approach introduced by BIQG</p> <p>Publication of Guideline for Reporting & Learning Systems (BIQG)</p> <p>Independent online Health Portal</p> <p>Austrian Health Care Structure Plan for 2010</p> <p>Regional Health Care Structure Plans for 2010</p>	<p>Outline of main quality objectives</p> <p>Standardisation of federal clinical guidelines</p> <p>Improve patient safety</p> <p>Improved planning for ambulatory and rehab care</p>
2011	<p>National Quality Report on hospitals by BIQG</p> <p>Introduction A-IQI by the Federal Health Commission</p> <p>Cross-sector Patient Satisfaction Survey (national) results presented (GÖG)</p> <p>Publication of the Reporting & Learning guidelines</p>	<p>Improved transparency</p> <p>Standardisation of data collection</p> <p>Improved patient satisfaction</p>
2012	Binding regulations on waiting lists for planned operations in hospitals	Improve access to care
2012	Pilot Critical Incident Reporting System implemented within University of Graz (intensive care, expanded to all units in 2013)	Identify potential hazards within healthcare
2013	<p>Introduction of target control health to monitor several indicators. This initiative relates to typical healthcare services (e.g. hospitals, doctors) (part of the Federal Target Control Agreement). Monitoring of performance is undertaken by GÖG.</p> <p>State Target Control Agreements (2013), deal with the design and implementation of quality measures</p>	Improve overall healthcare system performance and patient outcomes
2013	As part of the healthcare reform, 10 health targets were developed with the overall purpose of increasing	Increase number of health years by two between 2012 and 2032.

Year	Milestones	Objectives
	<p>health life years by two between 2012 and 2032 ('Health in All Policies' approach).</p> <p>There are 113 indicators which measure progress against each of the 10 targets. Monitoring responsibility largely falls under the remit of GÖG,</p>	
2013	Development of Austrian-Outpatient Quality Indicators (Healthcare Reform 2013). It is important to note that the A-OQI is in its infancy stage.	Coordinate quality indicators across healthcare spectrum
2013	Concept for primary healthcare units – established two PHUs (Healthcare Reform 2013)	Improve care coordination
2014	Implementation of ELGA portal , allowing patient access to care records	Improve patient understanding of healthcare
2015	Patient Satisfaction Survey undertaken by the Federal Health Target Commission	Understanding of perceived health system quality
2016	Implementation of Kliniksuche , which provides information on hospital quality (project of the Healthcare Reform 2013)	Inform public of hospital quality
2017	Introduction of TEWEB to provide patients with telephone and web-based healthcare services (only in Vorarlberg, Lower Austria and Vienna (first contact only).	Improve access to healthcare
2017	Commitment of €200 million to fund an additional 75 PHUs/coordinated care centres by 2020	Improve care coordination

Source: Format and information (up until 2011) taken directly from Schmidt *et al.* (2012) (363).

Measuring quality of physicians within social health insurance

Since 2006, quality standards among contracted and non-contracted physicians have been measured and monitored by the Austrian Society for Quality Assurance and Quality Management in Medicine (ÖQMed), a subsidiary of the Chamber of Physicians (291). Specifically, ÖQMed administers self-questionnaires (either online or on paper) covering a range of quality criteria largely related to structures, and to a lesser extent, processes (see table below) (291). Questions, in general, are broad and responses are limited to yes, no or not applicable. Given the questionnaire is self-administered, random checks are carried out by representatives of the Chamber of Physicians (Quality Assurance Officers), however, sufficient warning is provided to private practices prior to an inspection (approximately six weeks) (363).

ÖQMed comprises professionals from a range of different organisations including, the Federal Ministry of Health and Women's Affairs, GÖG, HVSV, social security institutions, Chamber of Physicians, academics, and the patient ombudsman (370). It is important to note that ÖQMed operates purely as an advisory board, in that the Chamber of Physicians is not required to implement their recommendations regarding which indicators should be measured.

Table 84: ÖQMed quality criteria categories (as of 2011)

Indicator categories	
<i>Evaluation criteria set out by ÖQMed includes 20 categories, with aligning sub-categories to measure the quality of care provided by physicians in social insurance.</i>	
Patient care availability	Professional qualifications
Premises of the healthcare facility	Personnel (employees)
Fire safety and job security	Patient history and documentation
Hygiene	Administration of results and findings
Emergency preparedness	Patient communication and education
Drug quality and availability	Interdisciplinary coordination
Clinical prescription of addictive drugs	Access to medical treatment and diagnosis

Medical consumables	Internal communication
Equipment	Adverse events/patient safety
Reliability of laboratory tests	Complaint management

Source: (371)

Measuring quality of hospital care

As previously outlined, countries are increasingly interested in evaluating, and paying for, health system performance. To do so, process or outcome measures are typically applied, with an increasing preference for the latter. Hospital discharge and readmissions are frequently evaluated for this purpose. The following section describes the existing uses of hospital discharge and readmission metrics in measuring and paying for performance, and reviews the primary evidence for this metric within the Austrian context.

Discharge care and post-discharge mortality and readmission rates

Discharge care and the incidence of post-discharge mortality and readmission events are used as process- and outcomes-based measures of hospital quality and performance.

One stream of evidence on hospital quality in acute coronary syndromes has relied on evaluations of discharge and secondary preventive pharmaceutical care, as well as hospital readmissions (372–378). This line of evidence typically evaluates whether, and to what extent, best clinical practices were met during discharge care for particular conditions. With regards to clinical outcomes, the incidence of all-cause and, in particular, unplanned hospital readmissions within some period after the hospital episode are taken as a measure of the quality of care delivered during the patient’s hospital stay.

For example, the literature has often used care and outcomes surrounding acute myocardial infarction (AMI) events to evaluate hospital and health system performance. Once an AMI has occurred, studies have evaluated how the efficiency of admission processes – including rapidity of ambulance services and hospital-based pathways to initial treatment – predicts readmissions, as well as in-hospital and post-discharge AMI mortality (379). Once an admission has occurred, studies have also evaluated how patient course is influenced by delivery of invasive (e.g., PCI) and pharmaceutical (e.g., thrombolysis, statins, aspirin) treatments at any time prior to discharge (373,375,380).

Less developed, but growing, is the literature that uses hospital readmissions to measure cost efficiency (381). This dearth of evidence likely reflects technical difficulties in associating patient outcomes, including readmissions, with hospital inputs, which may be defined in financial or physical resource terms. Efficiency analyses of this sort may be facilitated with the emergence of micro-costing hospital data, such as patient-level information and costing systems (PLICS) in the UK.

Discharge care and readmissions in Austria

Bearing in mind that discharge care and the incidence of post-discharge mortality and readmission events are used as process- and outcomes-based measures of hospital quality and performance, this section now considers the Austrian experience in performance on both of these measures.

The OECD defines hospital discharge as ‘important indicators of hospital activity’, that may be affected by several factors, including: the capacity of hospitals to treat patients; the ability of the primary care sector to prevent avoidable hospital admissions; and the availability of post-acute care settings to provide rehabilitative and long-term care services (382).

The OECD finds that in 2013 (or nearest available year) Austria and Germany were the two countries with the highest hospital discharge rates of OECD countries (Figure 29). At 263 hospital discharges per 1,000 population, Austria had the highest discharge rate of all OECD countries examined. Austria’s discharge rate was 55% higher than the OECD average of 169 hospital discharges per 1,000 population. Elsewhere, reports indicate that discharge rates are particularly high in Austria for hypertensive disease (383). It is important to evaluate these data with caution: for instance, an EC-sponsored research project in 2008 found low discharge rates in Spain, but attributed this to known underreporting (383).

The OECD argues that high discharge rates are generally observed in settings that have a larger number of hospital beds. Indeed, at 7.6 beds per 1,000 population, Austria ranks among the highest in countries evaluated by the OECD in number of hospital beds, adjusted by population (see Figure 19 and Figure 20). It should however be noted that Germany, which outranks Austria in number of hospital beds per 1,000 population, has a fewer number of hospital discharges per 1,000 population. This points to higher rates of use of hospital services in Austria: patients may genuinely have greater health needs, or may, for reasons that deserve further examination, overuse hospital services.

Indeed, an EC-sponsored report in 2008 indicated that higher rates of discharge in Austria were due to a higher rate of hospital readmissions for investigation and treatment of cancer patients than in other European countries (383). The report indicated that high rates of readmission were unlikely to be caused

by ‘morbidity reasons’ (383). The implications of this finding for patient health, and particularly the risks and benefits to cancer patients, remain to be investigated.

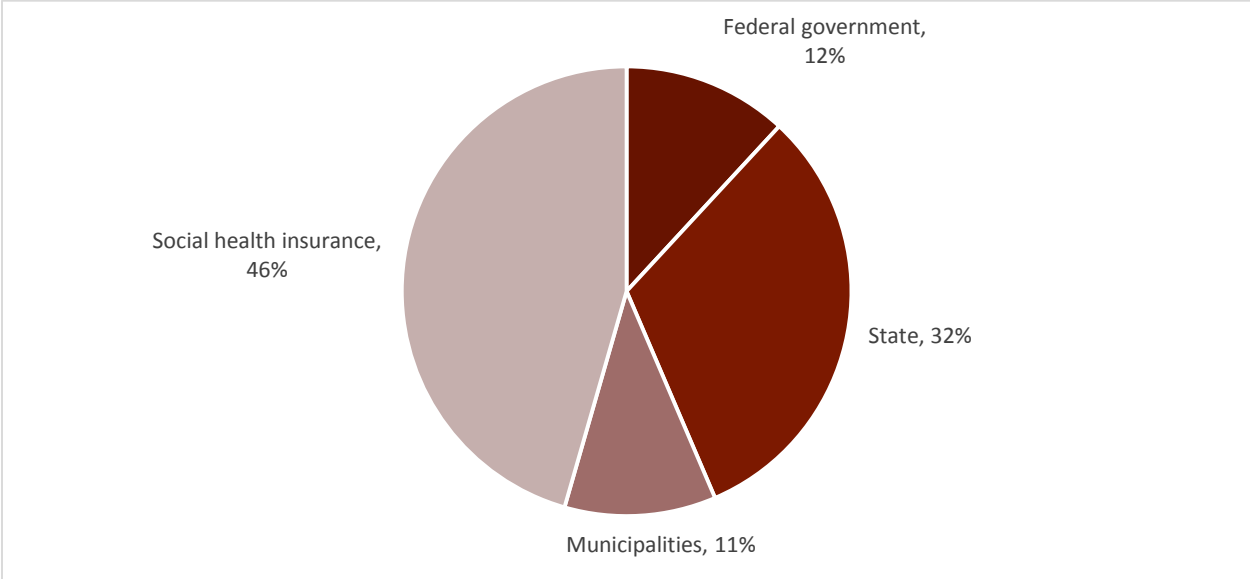
Factors contributing to high hospital admission rates in Austria

Fiscal illusion and political economy of hospitals

From the viewpoint of political economy, in an ageing society, political benefits can be reaped by providing ample healthcare services, e.g. in the form of hospitals. What is more, as most hospitals are eventually owned by the Länder, they provide the opportunity to exert power according to the theory of bureaucracy (384). Moreover, hospitals always provide employment for qualified personnel and improve economic activity in a region. All these effects reflect positively on regional (i.e. Länder and municipal) governments and thus create the tendency to over-provide.

The above scenario is normally outbalanced by the necessity to also tax the regional population to pay for the hospitals, as is the case in many other countries, e.g. Sweden. In Austria, however, nearly all taxes are levied by the Ministry of Finance, while social insurance contributions are collected by the health insurance funds. Therefore, the regional governments do not have to bear the negative consequences from taxing their populations for hospital services, while still benefitting, a phenomenon known as *fiscal illusion* (384). Also, the Länder, while endowed with ample control over hospitals (art. 12 of the Austrian constitution), pay only 32% of costs.

Figure 120: Public financing of fund hospitals



Source: Statistics Austria 2017

Indeed, there has been a continuous struggle between the federal government and local governments about hospital beds, with several attempts of the federal government to reduce their numbers, first the Austrian Hospital and Large Devices Plan (*Österreichischer Krankenanstalten- und Großgeräteplan*), then the ÖSG with a sanction mechanism in the 15a-agreement. Keeping hospitals open while the occupancy rate is low is politically infeasible. Therefore, also known as Roemer's law (385), there is the incentive to lower the requirements for hospital stays so that the capacities can be shown to be necessary, a phenomenon also found in empirical studies of the hospital sector (386).

The Länder also have the means to conduct such a policy as they command many competencies in the hospital sector. Specifically, they:

1. Enact hospital laws
2. Execute hospital laws
3. Regulate market entry (§3KaKuG)
4. Command the automatic majority in all decisions concerning hospitals in the state health funds
5. Own most hospitals
6. Finance hospitals partly.

In addition to this, most Länder hospitals have been organisationally privatised, and the 15a-agreement on the organisation and financing of the healthcare system explicitly states that state health funds shall be able to cover more than 50% of costs. This provision has the effect that the hospital companies owned by the Länder are treated as being entities of the private sector in the system of national accounts. Therefore, up until 2010, deficits and debts of the hospital companies did not count towards Austria's Maastricht deficit and debt. When Eurostat revised the rules of the manual on government deficit and debt, the debt burden of all Länder hospitals became known to the public for the first time amounting to €3.8 billion (6).

Reasons lying in the domain of social health insurance

For the management of Social Health Insurance, the main benchmark is not to keep the overall health budget in line, but to spend only as much as its own revenues allow (also known as *Einnahmenorientierte Ausgabenpolitik*), even more so as there is no competition for insurees in Austria.

As SHI pays a share of their revenues to the state health funds regardless of the number of patients actually attending hospitals, it is faced by the following decision problem:

Increasing the number of contract physicians will incur additional expenditure, while limiting the number of contracts helps contain costs. The external effect of this decision is that people are faced by a limited supply of services especially out-of-hours, while at the same time there is no user charge or restriction of using hospital outpatient departments.

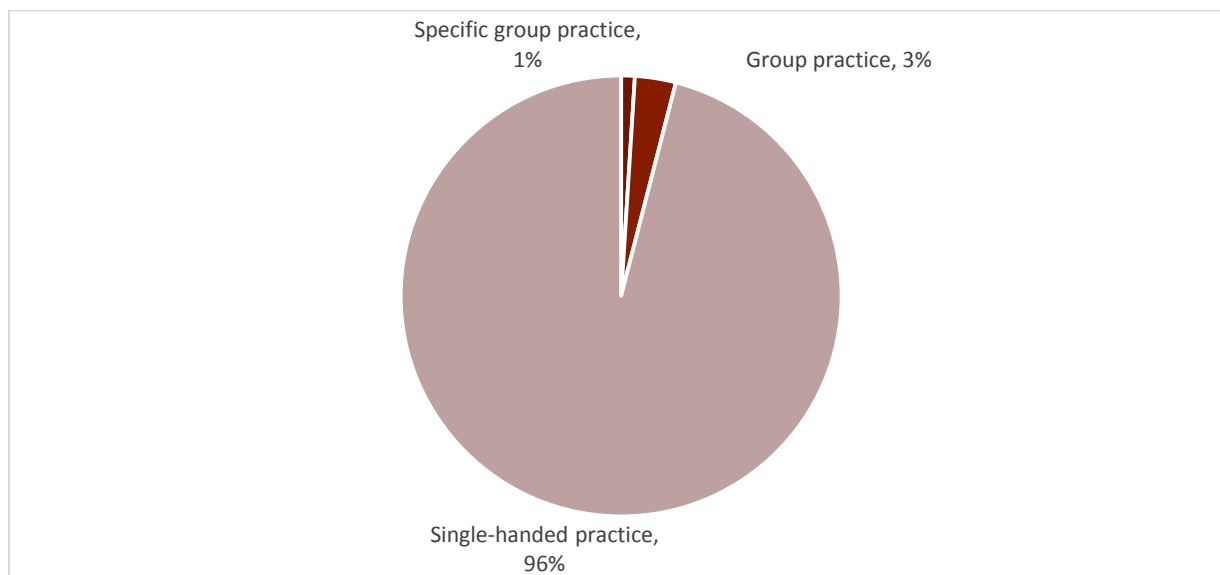
Figure 114 illustrates that despite a growing population, the number of contracts between SHI and the Chambers of Physicians remains the same, effectively reducing the relative capacity in the extramural sector, essentially constituting cost-shifting behaviour.

The fact that this is not an effect of a shortage of physicians can be shown when calculating the share of physicians who own practice and do not have a contract with any social insurance carrier (63% of specialists and 40% of GPs).

Structure of extra-mural sector and incentives for patients

Given the incentive for SHI to underprovide contracted physician services, and as the extramural sector consists mainly of single practices, patients with more complex problems must book several appointments, and spent an increased amount of time waiting for services. What is more, GPs up until 2015 received only three years of vocational training, all of which taking place in hospitals. More than 95% of contract physicians work in single practice, with only a practice aid but no nurse practitioners or other medical professions. Contact hours are therefore limited and often only 20 hours a week. Specialists work mainly in single practice as well, making it more difficult to integrate services. While Germany introduced outpatient facilities providing integrated specialists services a long time ago with its legislation on integrated care, efforts to do so in Austria were never successful (40). This leaves a gap in service provision of integrated care for the chronically ill between single practices on the one end and hospitals on the other, sometimes called intermediate or step-down facilities (387,388).

Figure 121: Practice settings of §2-Physicians



Source: (389)

By contrast, outpatient departments offer all services under one roof with same-day service, 24/7. Thus, in order to avoid long waiting times in the extramural sector as well as having to keep multiple appointments, patients will, given these circumstances, prefer to go to outpatient hospital departments.

Despite its importance, very little empirical work has been devoted to this topic. However, Haidinger *et al.* (2013) conducted a study on persons visiting outpatient departments without referral (390). They find that at least 60% of these could have been treated by a GP, while only 3% required treatment in a hospital.

The weakness of the primary care sector can also be seen when looking at avoidable hospital admissions. Austria performs very poorly in this respect (see Figure 33 to Figure 36).

Sonderklasse and payment system

According to political economy literature, hospital managers and department heads are not impartial when it comes to more or less funds allocated to their hospital even if the hospital is not-for-profit (see Mueller (2003) pp. 362ff and pp 373ff for a review of empirical studies) (384). More funds might not mean more profits in this case, but they offer the possibility to pay higher wages, to pursue scientific interests, to be held in higher esteem by peers or simply to exert power. In Austria, at least two factors set strong incentives reinforcing this mechanism, the *Sonderklasse* and the payment system.

Sonderklasse

Even in Austrian not-for-profit hospitals, patients can pay for better amenities and the right to be treated by a specific physician, either out-of-pocket or through their voluntary health insurance. The patients are then admitted to the *Sonderklasse*. The patients' payments go to the hospital but also increase the income of the physicians working at the department. Therefore, both the hospital management and the physicians have an incentive to admit and treat such patients. The hospital law KaKuG in § 16 sets some limits to this. Not-for-profit hospitals must not have more than 25% of beds in the *Sonderklasse*. In the long run though, this sets the incentive to increase the total number of beds, as only then also the number *Sonderklasse*-beds can be increased, contributing to what can be seen in Figure 19.

Payment system

While the inpatient sector of hospitals is paid through a DRG-like system called LKF, the outpatient departments only receive a global budget based on historical values. In effect, it is much more valuable for the hospital to have patients admitted to inpatient departments than treating them in the outpatient department. For this reason, even cataract surgery was mainly performed during an inpatient stay only some years ago.

In order to change the incentives, a first step was the introduction of the *Tagesklinikatalog* in 2006, a list of procedures that could be performed in day clinics, while the hospital still received payment for an overnight stay. Since then, more and more services are provided in day clinics, albeit with considerable regional differences (391). Another step to improve the situation would be the introduction of a DRG-system for outpatient departments. Preparatory work has been undertaken with the implementation of the *Katalog Ambulanter Leistungen (KAL)*.

6.4.6 Policy options: Maximising quality of care

A key mechanism to enhance the quality of care provided by physicians is to measure their performance against a set of key indicators. These indicators can relate to healthcare structures, processes or clinical outcomes, and in many countries, are linked to financial rewards or penalties. The agency responsible for measuring and monitoring indicators has important implications for quality of care, given it is their role to ensure the data collected is used in a way to enhance patient care.

Based on a review of policies used to measure quality among Austrian physicians, and international experiences, the following policy options have been developed. These options can be divided into the three groups, and are aimed to maximising quality of care within the Austrian social health insurance system (see Figure 122 for an overview of policy options).

Figure 122: Summary of policy options

<p>Role of ÖQMed</p> <ul style="list-style-type: none">• Retain ÖQMed and create an additional independent quality committee responsible for monitoring the quality of care among social health insurance physicians.• Relocate ÖQMed to the Ministry of Health and Women’s Affairs, and give the organisation control over monitoring the quality of care among social health insurance physicians.• Maximise the value of data collected through quality indicators through, for example, providing physician feedback and sharing best practice principles. <p>Data availability and quality indicators</p> <ul style="list-style-type: none">• Code patient diagnosis.• Increase focus on outcome indicators, and where possible link them to aligning process indicators.• Link quality indicators across all levels of care. <p>Hospital admission, readmissions and discharge management</p> <ul style="list-style-type: none">• Investigate the causes, as well as clinical and policy implications, of high rates of hospital discharge and readmission in Austria.• Financial targets within Zielsteuerung Gesundheit if real values, as opposed to nominal values, are used as the basis for the target.• ÖSG to base forecasts on epidemiological data and best practice service provisions.• Integrate secondary care units in outpatient sector with primary care and hospitals.• For the LKF, link payment to quality.• Set up joint budgets for the chronically ill including both social health insurance and the Länder.
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ÖQMed role

As previously discussed, the Chamber of Physicians is responsible for monitoring the quality of care provided by physicians within social health insurance. To assist the Chamber in measuring and monitoring healthcare quality, it has established a scientific advisory board, ÖQMed, comprising representatives from numerous organisations/levels of government, including two from social health insurance (see section 6.4.5 for further details).

Given ÖQMed is a subsidiary of the Chamber, it is not independent, further, its current role is purely advisory, with no requirement for the Chamber to implement recommendations made by the board. Such an arrangement is challenging given those measuring the quality of doctors are doctors themselves. To overcome a potential conflict of interest, the following two mutually exclusive options are proposed. The first option would be to retain ÖQMed within its current form in the Chamber, however, ultimate responsibility for monitoring physician quality would lie with an independent quality committee located within the Ministry of Health and Women's Affairs. Alternatively, ÖQMed could be relocated to the Ministry of Health and Women's Affairs, to ensure its independence. Under this new arrangement, ÖQMed would be responsible for developing indicators to measure physician quality, and deciding how information collected through the indicators are used.

If the former approach is adopted, consideration should be given to limit avoid/limit duplication between ÖQMed and the independent quality committee. Under both options, either ÖQMed or the independent quality committee would be jointly funded by the Ministry of Health and Women's Affairs, and the Chamber of Physicians.

To maximise the value of data collected on quality, it is recommended that the final agency responsible for measuring and monitoring physician quality employ one or several of the following approaches: providing physician feedback, sharing knowledge (best practice), intervention when poor performance is identified, and potentially, in the long-run, pay-for-performance (see Figure 123). To maximise the potential of all strategies outlined above, it is recommended all interventions be designed in cooperation with the Chamber of Physicians.

Figure 123: Maximising the value of data on quality indicators

Physician feedback

Each physician could receive a short 'scorecard' outlining their performance across the different quality indicators. In addition to their individual performance, physician performance at the relevant regional level and national level would also be provided, allowing for comparisons to be drawn. The scorecard would highlight areas where, in relative terms, the physician is performing well (i.e. above the regional/national level) or poorly. Scorecards would be provided biannually, by mail or online, allowing physicians to track their performance over time.

Given differences across regions, indicators will be risk-adjusted so that like-for-like comparisons are drawn (see following section for further details on quality indicators).

The public could also have access to performance data, however, it is recommended that data at the regional, as opposed to the individual provider level, only be made available.

Knowledge sharing

As previously outlined, data on quality indicators will be tracked across physicians and time. Therefore, significant positive changes in performance at the individual, practice or regional level will be tracked. Investigation into how improvements were made should be undertaken, with findings shared and promoted to all physicians. It is important to note that only regional aggregate data would be available to all physicians. That is, individual performance data would only be accessible by the physician themselves.

Intervention

Readily available data on quality indicators at the individual, regional and national level, will enable ÖQMed or the independent quality committee to identify areas of need within the system. For example, if physicians in an entire region perform poorly in certain indicators, investigation and appropriate intervention at the regional level will be required. Prior to intervention, a thorough analysis is needed to ensure the problem lies with physician quality, as opposed to external regional factors. At the individual level, poor performing doctors will be easily identified, allowing intervention at the earliest possible stage. If performance does not improve, disciplinary action may be taken.

Pay-for-performance

Governments across the world are increasingly interested in incentivising high-quality care through monetary rewards or penalties. Such an approach could be adopted in Austria, however, the evidence of its impact on quality is limited.

Legal considerations

No particular constitutional impediments have to be faced in this respect, but some amendments to the current system of contractual agreements would be required.

Quality indicators

Across all healthcare systems, collection and analysis of quality indicators at the outpatient level is in its early stages, when compared to hospital care. This is the case in Austria, where a limited number of structure and process quality indicators are collected to measure the performance of contracted and non-contracted physicians. The focus on structure and process indicators does not follow international trends, which is to measure patient outcomes directly.

To collect data on outcomes, information on patient diagnoses is required. At present, social health insurance physicians are not required to provide this information. This shortcoming was frequently highlighted in roundtable stakeholder discussions, and has also been recognised by government as evidenced by the topic's inclusion in the latest healthcare reform (i.e. health targets).

Given the above, the following recommendations are made to improve quality of care provided by contracted and non-contracted physicians:

Diagnosis coding

We support current thinking among a range of Austrian healthcare stakeholders that physicians be required to code patient diagnosis for each consultation. Such information would allow social health insurers to develop and implement of outcome quality indicators.

It is important to note that previous efforts have been implemented to introduce diagnosis coding at the primary care level. Specifically, discussions were had regarding the implementation of ICPC-2 (International Classification of Primary Care, 2nd edition), however, were never introduced.

Process and outcome indicators

Future evaluations of physicians should focus on both process and outcome indicators, and could, where possible link the two types of indicators to ensure results are interpreted correctly. Specifically, by linking outcome and process indicators, changes in patient health outcomes are more likely to be attributed to a change in the provision of care, as opposed to external factors outside the control of the physician. However, it is important to note that combining two indicators into one represents additional work on part of the physician. For this reason, the total number of indicators would have to be reduced. Put simply, there is a tradeoff between the total number of indicators, and the quality of each indicator.

Finally, it is important to note that measurement of outcome indicators, relative to those related to processes, are more burdensome given individual patient circumstances should be considered. So, although outcome indicators are ideal, process indicators may be more efficient, further, process indicators within the healthcare sector are relatively well developed.

Working Group

As part of the 2013 Healthcare Reform, a Federal Target Control Commission (*Bundeszielsteuerungskommission*, B-ZK) was implemented, and operationalised under the Federal Health Agency (*Bundesgesundheitsagentur*, BGA). It is the responsibility of the B-ZK to oversee a Coordinating Committee (Ständiger Koordinierungsausschuss) responsible for four professional groups covering e-health, public health, supply processes and supply structure. Responsibility for the quality strategy falls under the remit of the professional group dedicated to supply processes.

We recommend that, should there be an agreement to introduce additional process and outcome indicators, the professional group for supply processes be given responsibility for designing and implementing indicators. That is, the professional group could develop indicators in-house or commission a relevant organisation to undertake the work (e.g. Federal Institute for Quality in the Health Service, BIQG (Bundesinstitut für Qualität im Gesundheitswesen), which sits within GÖG). Regardless of whether indicators are developed in-house or commissioned by an external organisation, members of the medical community should be involved in the decision-making process. Failing to adequately consult physicians is likely to delay implementation of and participation in the collection of quality indicators.

Legal considerations

No particular constitutional impediments have to be faced in this respect.

Data availability

Measurement of quality, in Austria and across the world, is largely focused on isolated aspects of care. Such an approach fails to holistically measure quality of care, thereby diminishing the utility of collected information (392,393). For this reason, any additional process and/or outcome indicators implemented at the primary/outpatient care level would ideally be linked with new or existing inpatient quality indicators. By doing so, patient pathways are created which facilitate understanding of healthcare performance at the system level (an example of a COPD patient pathway within the UK's NHS is provided in Table 85). Further, linking quality indicators across the spectrum of care fosters joint accountability across Federal Government, Länder and social health insurance.

Coordination of indicators across the spectrum of care was stipulated within the 2013 Healthcare Reform (Federal Target Control Agreement), however, to date, it is unclear what policies have been implemented to achieve this goal. For this reason, it is recommended that policy-makers enhance current efforts to better coordinate quality indicators across the spectrum of care be enhanced.

Table 85: Patient pathway quality indicators for COPD (UK, NHS)

Domain	Quality indicator
General practice (diagnosis)	Prevalence of COPD
	Asthma prevalence
	COPD diagnosis
	Exception rate for COPD indicators
General practice (treatment)	Adults with COPD who smoke
	Patients with long-term conditions with smoking status (recorded)
	Patients with long-term conditions offered education on smoking
	Successful smoking quitters at four weeks
	Prescribed nicotine replacement therapy or varenicline
	Eligible COPD patients offered rehabilitation
	COPD patients with a medical review

Domain	Quality indicator
Secondary care	Length of stay, emergency inpatient COPD admissions Emergency admissions for COPD Emergency readmissions within 28 days and 90 days
Mortality and end of life care	Deaths from COPD (all ages, and less than 75 years) Years of life lost due to mortality from COPD Deaths with mention of respiratory disease as a cause

Note: See Jonas *et al.* (2012) for a through overview of COPD patient pathways in the UK (392).

Legal considerations

No particular legal impediments have to be faced in this respect.

Hospital admission, readmissions and discharge management

Readmissions and discharge management

Hospital discharge and readmission rates in Austria are high compared with other countries. As additional evidence is generated on the causes of these phenomena, Austrian policymakers may wish to consider approaches to reduce hospital readmissions without compromising patient outcomes. To provide Austrian policymakers with a guide on how to do so, the following section reviews and synthesises two major and recent empirical contributions to the literature that evaluate this issue.

Couturier and colleagues (2016) conducted a systematic review of observational and interventional studies evaluating components of the hospital discharge process and patient outcomes following discharge (394). The authors find that all relevant studies (n=20) explored various discharge-process components, including: discharge summaries, discharge instructions, drug-related problems at discharge, transition from hospital to home, and continuity of care after hospital discharge. At the same time, most studies examined re-hospitalisations (n=18), emergency department visits (n=8), and mortality (n=5). Certain studies that examined patient re-hospitalisations and emergency department visits ‘reported at least one significant association between the discharge process and these outcomes,’ while none reported

an association with mortality. Evidence-based approaches to reducing hospital readmissions may therefore reduce healthcare spending without negatively impacting patient outcomes.

Leppin and colleagues (2015) highlight that policies aimed at reducing 30-day post-discharge hospital readmissions aim to improve hospital quality (395). Like Couturier and colleagues (2016), Leppin and colleagues (2015) therefore conduct a review of papers published between 1990 and 2013 to ‘synthesize the evidence of the efficacy of interventions to reduce early hospital readmissions and identify intervention features that might explain their varying effects’ (395). Of the trials that were published over this period and met eligibility criteria, 42 prevented early readmissions to hospital. Exploratory subgroup analyses also revealed that the following intervention characteristics were associated with greater effectiveness in reducing post-discharge hospital readmissions: interventions containing many components (1.4 times more effective than other interventions); interventions involving more individuals in care delivery (1.3 times more effective than other interventions); and interventions that support patient capacity for self-care (1.3 times more effective than other interventions). Consistent with Couturier and colleagues (2016), post-hoc regression analysis revealed that providing patients and caregivers with comprehensive, post-discharge support could help reduce 30-day post-discharge hospital readmissions. If hospital discharge is taken to represent one component of patient care, improving hospital discharge processes may therefore reduce unnecessary hospital readmissions, reduce costs, and indeed improve the care that is provided to patients.

Austrian policymakers should take this evidence review to indicate that it may be possible to reduce unnecessary and costly hospital readmissions by better managing the hospital discharge process. The empirical evidence also appears to suggest that doing so does not compromise patient outcomes. By reducing costs, while preserving or indeed improving patient care and outcomes, comprehensive approaches to improving patient discharge care may therefore provide unambiguously positive value to patients and the health system.

It is arguably acceptable from a clinical standpoint—albeit technically inefficient given lower-cost, alternative methods of care for non-urgent conditions—for Austrian patients to rely heavily on hospital services if it is for routine care. Should this be the case in Austria, policymakers should consider prioritising reforms that increase the efficiency of healthcare delivery. However, the findings presented above would be more concerning from a health systems and clinical perspective if high hospital discharge and readmission rates are due to unplanned, urgent medical needs. Further research is needed to investigate the causes, as well as clinical and policy implications, of high rates of hospital discharge and readmission

in Austria. Even as this research is undertaken, the existing empirical evidence suggests that comprehensive efforts to improve the hospital discharge process may reduce healthcare costs, while preserving or indeed improving patient care and outcomes, and may therefore provide unambiguously positive value to patients and the health system.

Hospital admissions

In order to outbalance political benefits and costs, federal government funds to Länder should be based on objective criteria that reflect the needs of the population. Additional pressure could come from the financial targets in the *Zielsteuerung Gesundheit* and the stability pact. The financial targets could be more effective in that real values instead of nominal values are used and concrete efficiency gains form the basis for this target.

The Austrian Structural Plan for Health (ÖSG) forecasts the capacities in the inpatient and outpatient sector that ought to be planned in detail on the state level and then implemented. But as the international comparison shows, its success in terms of reduction of beds is rather limited. One of the reasons might be that the planning is based on current provision of services, which might be too high. Ideally, the ÖSG would base its forecasts on epidemiological data and best practice of service provision, rather than taking the current demand as a proxy for need.

Alongside the planning in the ÖSG and the *Zielsteuerung Gesundheit*, the quantity and quality of services in the extramural sector should be determined with the goal to reduce avoidable hospital admissions and keep the vast majority of treatments in the outpatient setting, while hospitals only provide higher level services. A first step has been taken by the initiative to introduce a true primary care system, which has been shown to reduce unnecessary admissions. Nevertheless, the high number of single-handed practices and missing intermediate (step-down) facilities with specialists providing integrated services to chronically ill have to be tackled as well. A small first step is the commitment in the latest 15a agreement to set up secondary care units in the outpatient sector. While this is necessary, integration of these units with primary care and hospitals is not yet adequately addressed.

With regards to payment, the LKF system could be enhanced in several directions. Payment could be linked to quality, by, for example, paying a stay and possible readmissions only as a bundle. For the outpatient departments, the development of a DRG system seems to be crucial, also to improve the information on patient paths. In a later step, care for chronically ill in the inpatient and outpatient sector

could be paid for by a joint pool of funds by SHI and the Land using a bundled payment system. Pilots could be set up for high-cost patients.

When reducing hospital capacity, funds are needed in order to treat people elsewhere, while fixed costs in hospitals cannot be reduced at the same time. A mechanism could therefore be set up to compensate hospitals for a limited period of time for the money that might go to the extramural sector within the virtual budget between SHI and the Land. During this time, facilities either have to be wound down or their alternative use has to be implemented. Alternative uses will depend on the regional requirements. Inpatient capacities can be transformed into long term care facilities, for which demand will presumably increase in coming years. Outpatient departments could accommodate primary care units or specialist group practices providing integrated care services.

Summary of policy options to improve quality through contractual negotiations

As outlined in Table 83, numerous policies have been implemented in recent years to improve measurement and monitoring of quality within the healthcare sector. Despite this, Austria continues to lag behind international trends regarding quality management.

In response, a number of policies to improve healthcare quality have been proposed. The first set of options relates to the role of ÖQMed, which to date has not been fully utilised given its placement with the Chamber of Physicians. Under our proposals, ÖQMed could retain its current structure, however, it would sit as an independent body and be jointly funded by the Chamber of Physicians, and the Ministry of Health and Women's Affairs. Alternatively, in addition to the ÖQMed, an independent quality committee could be developed, which would have ultimate responsibility for monitoring physician quality. Under both options, we advise that information collected be used to provide physicians with regular feedback, better inform the public on healthcare quality, and potentially, in the long-run, link performance to financial incentives.

The second set of options relate to the types of indicators used to measure physician quality. Following international trends, it is recommended that indicators focus on process and outcomes, and to a lesser extent structures. Ideally, process and outcome indicators would be linked, however, consideration should be given to the additional burden this would place on physicians. It is important to note that before outcome indicators can be introduced, physicians must record patient diagnosis. Finally, to ensure the most appropriate indicators are chosen, we recommend that the existing the professional group for

supply processes take responsibility for designing and implementing additional process and outcome indicators.

The final set of policy options concerns data availability. Specifically, we propose that instead of collecting and analysing quality data in silos, efforts be made to coordinate quality indicators across the spectrum of care.

6.5 Demand and supply of physicians

This section examines the future supply and demand of physicians working within the Austrian healthcare system. Specifically, through an examination of potential policies to increase the availability of physicians, as well as measures to enhance physician productivity.

6.5.1 Measures to increase availability of physicians

The calculations outlined within this section are based on a static model, for which historical developments have been combined with, for example, legally justified changes, and extrapolated until 2030. The results of the model are for illustrative purposes as several of the assumptions need to be further validated. This is particularly relevant for results regarding the under- or over-supply of physicians.

Section 6.5.1 has been structured as followed: Follow a physician's education and employment path and discuss in a chronological order at which crossroads and in which situations inflows could be increased or outflows reduced, and which measures were already taken to achieve a higher supply of physician capacity, see Figure 124.

In the figure, green arrows represent an 'ideal' physician's path from achieving the 'Matura' (A-levels), passing the entrance examination into medical school, working as a physician and finally to retirement. In the course of this path, several 'control knobs' can be identified:

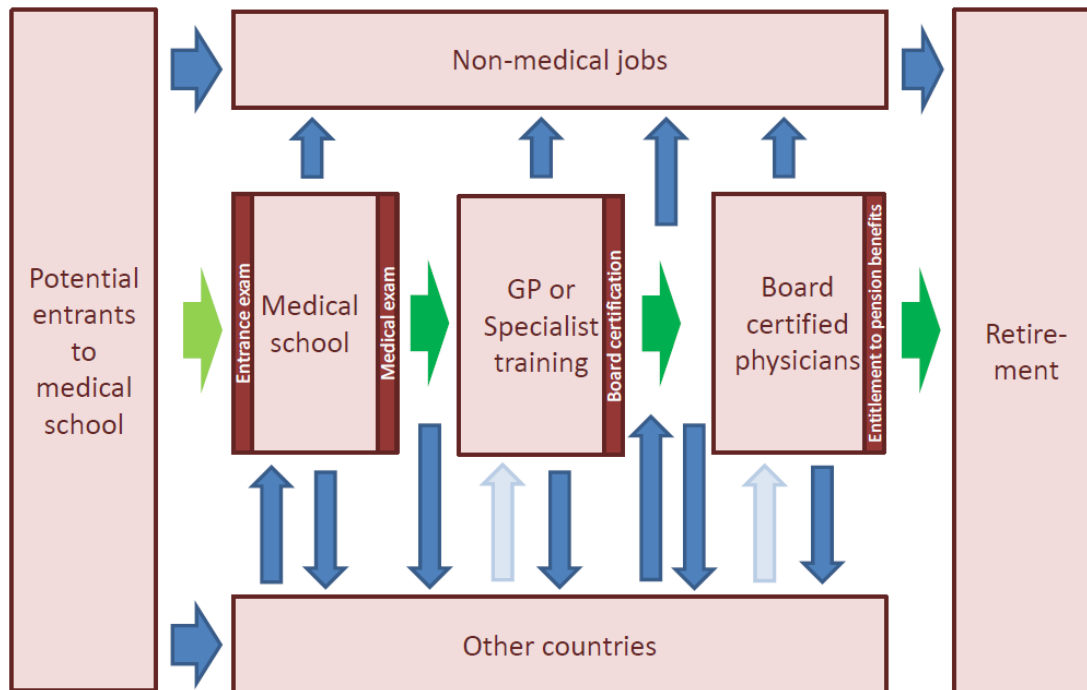
- Admission to medical school and continuing through the end. The annual number of graduates from public medical schools fell significantly around 2012 (Figure 125). This is directly related to the introduction of more restrictive admission procedures at all three public medical schools in 2006, and perhaps to some degree already to the new *Summative Integrative Prüfung* (SIP, the final exam after each year which is necessary to pass in order to continue medical school) in 2002, at the medical school in Vienna. Since 2006, there has been a fixed maximum annual number of first-year students in all (then) three public medical schools.

- Due to unrestricted access to medical schools before introduction of these restrictions, output from medical schools was so high that availability of internships was a bottleneck, and waiting several years before achieving a post as intern was quite common.⁸³ Today, several hospital administration managers complain about too few applicants for internship vacancies. However, we do not know any hard data on such vacancies.
- Also the chronologically next joint, the transition from professional training to autonomous work as a physician, is today characterised by much fiercer competition for the best applicants, resulting, for example, in rural communities offering generous help for young physicians replacing the retiring GPs.
- Chronologically the last transition, from work to retirement, has not yet been a topic for public discussion apart from the general retirement discussion. Over the last couple of years, however, some regulations with immediate impact on retirement decisions have been changed, which are discussed below.

In Figure 124, the blue arrows symbolise entries to and exits from the medical profession including education and training for the profession. These flows are in some cases of high and in most cases of not so large significance for the medical capacities in Austria. In most cases, hard data on these flows are not available. The following paragraphs discuss the green arrows in Figure 124 as well as the most relevant ones of the blue arrows, i.e. drop-outs from medical schools and emigration after medical school.

⁸³ As a consequence, oversupply of fresh graduates from medical school resulted in the perception of interns as “cheap labour”, fulfilling many administrative tasks and tasks more suited to nurses than doctors. Payment was low, resulting in interns’ desire for well-paid night-shifts and working many hours overtime.

Figure 124: A physician's path of education and employment



Admission to medical school from Austria and other countries

Austria has a long tradition of very open admission procedures at university, and this topic has been a hotly debated issue repeatedly in political elections. Due to high inflow of non-Austrian students – predominantly from Germany – who are expected to leave Austria once they finished medical school, also Austria restricted the number of admissions to medical school in 2006. For admission in October 2017, the number of places in public medical schools is displayed in Table 86. The medical school in Linz is not only the smallest, but also the youngest public medical school in Austria. Since 2014 and in cooperation with the Graz medical school, Linz is the first medical school to apply the bachelor-master-system. It is planned to stepwise increase capacity in Linz from 120 to 300 places per year by 2022/23. Currently, Linz covers only the first four semesters of the bachelor program, for semester 5 and 6 students have to move to Graz. It is planned to also start a master program (6 semesters) in Linz in 2017/18.⁸⁴

⁸⁴ <http://www.jku.at/>.

Table 86: Capacities for first-year students in public medical schools, Austria, 2017

	Human medicine	Dentistry	Total
MedUni Wien	660	80	740
MedUni Graz	336	24	360
MedUni Innsbruck	360	40	400
JKU Linz	120	-	120
Total	1476	144	1620

Source: <https://www.medizinstudieren.at/>.

Note: In addition, there exists the Paracelsus Medizinische Universität Salzburg, however, this is technically a private university.

Together with upper limits for admission to medical school also specific admission procedures had to be introduced. Realising that large numbers of German students outperformed Austrian applicants in these tests, admission to one of the public medical schools (Vienna, Graz, Innsbruck, Linz) furthermore has been linked to a quota. Per agreement with the EU Commission, the quota for Austrian students is 75% of each medical school's capacity, 20% for other EU students, and 5% for students with other nationalities. EU citizens with Matura from an Austrian school fall into the Austrian quota. The EU commission originally intended to phase out the quotas in 2016. But recently (2017) the application to medicine (not dentistry) was allowed to continue, subject to Austrian authorities providing proof for undersupply of physicians in Austria otherwise.

In the initial phase of selective admission, medical schools applied different admission procedures. For example, in Innsbruck, the Swiss EMS test was applied as time for developing an own instrument was rather short. Graz medical school in contrast to this developed their own instrument, fully aware that the initial test lacked a validation phase and consequently was found to lack proper testing for social-emotional competencies (396). Since 2013, all public medical schools apply a common test, MedAT-Z for dentists and MedAT-H for general medical school. The examination usually takes place on the same day, this year on 07.07.2017. Applicants have to pay a test fee of 110 Euro per applicant in order to be allowed

to sit; this fee is meant to cover the medical school's test costs.⁸⁵ Additionally, the test fee might serve as a deterrent for 'not so serious' applicants.

The MedAT-H test is a multiple-choice test that in 2016 comprised 40% questions from mathematics, biology, physics and chemistry, 40% questions regarding cognitive competences, 10% of social-emotional competences, and 10% questions regarding text comprehension. The test for admission to dental medicine deviates and also includes e.g. manual competences.

Drop-outs from medical school

Before 2006, in a very open admission regime, drop-out rates from medical school often reached 50% and duration at medical school often reached 9 rather than the scheduled 6 years, e.g. due to waiting times for labs (396). As expected, **drop-out rates** from medical school fell since selective admission into medical school, more students can finish in the scheduled time and performance in examinations improved. In Innsbruck, a comparison between 'open admission' (2002–2004), and 'selected admission' (2006–2009) showed a drop in the average annual number of study beginners from 602 in the open admission period to 349 during selected admission⁸⁶. Despite this reduction, the number of students passing SIP 1 increased both in absolute and in relative terms. Seventy-one per cent of the admitted selected students passed SIP 1 compared with 49.1% of the unselected group. This effect, however, is restricted in so far as performance at SIP 3 seems to be closer related to performance at SIP 1 than to the admission test: 91.4% of the students with open admission who had passed SIP 1 were also successful in SIP 3, compared to 92.6% in the selected admission group (397).

Taking 'never trying to pass SIP 1' as the drop-out criterion, 36.7% of the students to Innsbruck medical school were regarded as drop-outs in the open admission group. In the selected admission group the number of drop-outs fell significantly to 17.5% (397).

Between 2006 und 2013, different admission procedures were applied, depending on the medical school. Graz applied a different test than Innsbruck, but also noted a significant decrease in drop-outs after restricting admission. Whereas only 20.1-26.4% of openly admitted students completed the first two study semesters within the scheduled time of 1 year, this percentage rose to 75.6-91.9% for the selected admission group (396). Applying hazard rate models, a comparison between academic years 2002–2003

⁸⁵ <https://www.medizinstudieren.at/>

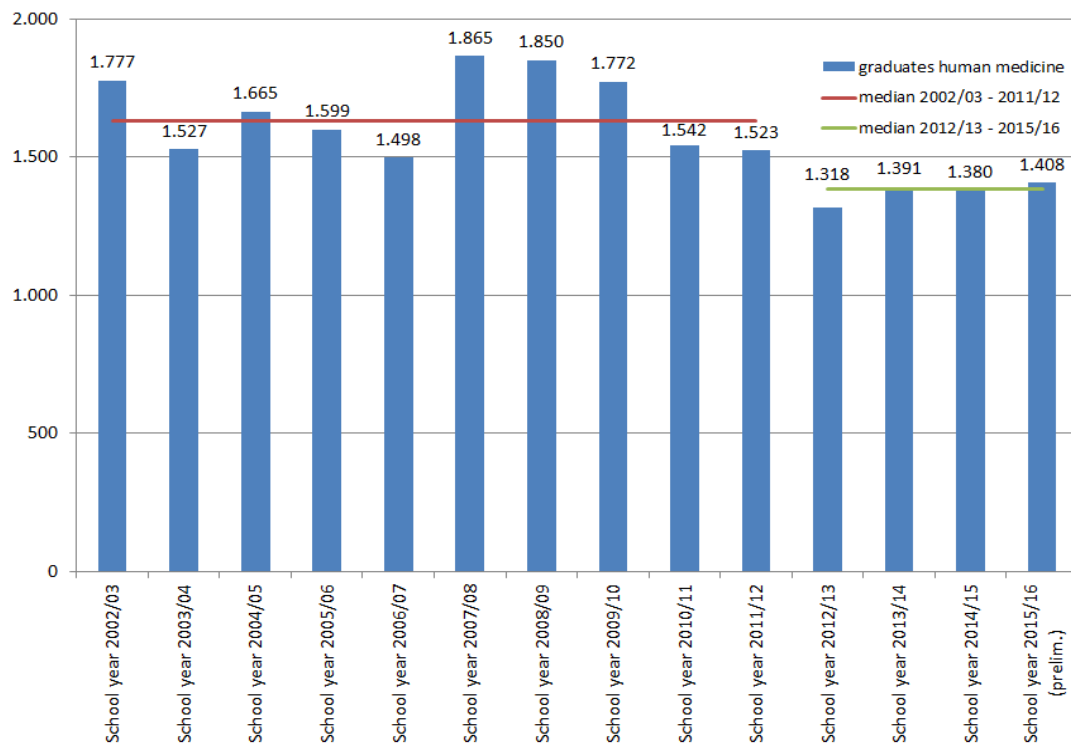
⁸⁶ This comparison was performed with regard to the then applied admission test, a predecessor of the current MedAT-H called EMS - Eignungstest für das Medizinstudium in der Schweiz.

to 2008–2009 showed in openly admitted students a significantly higher risk for dropout in female students and in older students, whereas no such effects were detected after admission testing (398).

Transition between medical school and practical training

Changed admission procedures including the limited number of available places for first semester students resulted in a **dropping number of graduates** approximately six years later. Students during unrestricted admission suffered from higher competition for lab places etc., which in many cases caused delays in their educational progress, and only few students managed to finish the program within the minimum time of 12 semesters. Due to this effect in combination with high drop-out rates, and perhaps also because there was no selection of the most suitable students at admission, we can perceive the effect of the changed admission rules on the annual number of graduates only at a high-level, see Figure 125.

Figure 125: Number of graduates, human medicine, 2002/03- 2015/16

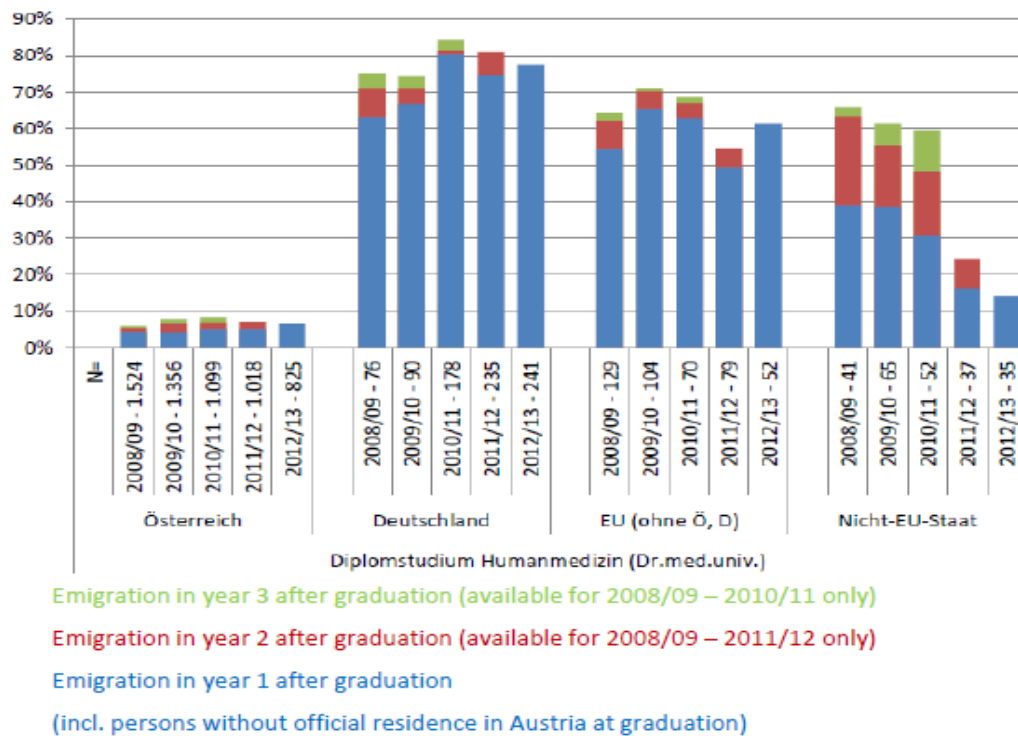


Source: Unidata (data-warehouse of the Federal Ministry of Science, Research and Economy), IHS.

We quantify the drop in graduate numbers as the reduction from the median of the period 2002/03 – 2011/2012 to the median of the period 2012/13 – 2015/16, which amounts to 1632-1386 = 247 graduates or 15% of the open admission period.

High rates of **emigration after graduation** can be perceived among medical graduates of all nationalities; among Austrian graduates those from medical schools have higher emigration rates than graduates from any other educational field. Statistics Austria calculated the percentage of persons without official residence in Austria in up to three years after graduation, with an increasing share of emigrants among German and Austrian citizens (399). In school year 2012/13, 6.7% of Austrian graduates left the country within one year after graduation, while in year 2008/09 it was only 6.1% within three years. Highest rates of emigration can be observed among German graduates of the years 2010/11 and 2011/12 (and presumably also the following years), exceeding 80% within three years (Figure 126). Note that in 2012/13 the first graduates after restricted admission finished medical school. It is therefore straightforward to assume similar rates of emigrants in the following years. This assumption corresponds to the idea that emigration among selected high-performers is systematically higher than among the not (or less effectively) selected students during the open admission period.

Figure 126: Emigration of medical school graduates (2008/09 – 2012/13)



Source: Adapted from Statistics Austria (2016) (399).

Board certification

In order to practice medicine, graduates from medical school need a board certification which can be achieved after a practical medical training program/internship consisting of 9 months basic medical training plus a minimum of 33 months (general practice) or 63 months (specialties) in pre-defined specialties and settings.

It is not exactly clear how many graduates from medical school continue with a medical career in a broader sense. For Austria, OECD Health Statistics reports *practicing physicians* (including interns, excluding physicians working without direct contact to patients in Austria), but not *physicians licensed to practice*. Also according to the Chamber of Physicians, the latter data are not collected in Austria.

The Chamber of Physicians registers board certifications of physicians. Over the period 2010-2015, we can observe a rising number of registrations for specialists, but a rather stable number of registrations for GPs (Figure 127). In 2016, however, preliminary data for GPs show a marked drop in the number of GPs, from 864 (median 2010-2015) to 660 (2016). Some licenses to practice as GP achieved in 2016 might be added later because the respective physicians do not have their licenses registered at the Chamber of Physicians before they actually need it (e.g. during not practicing while on maternity break, or while practicing and perhaps also achieving a license abroad). We do not, however, assume that this effect will change the overall picture of a remarkable drop in the number of annual new GP registrations in 2016. Furthermore, we should allow for the possibility that some of the registrations in 2016 are for persons who started medical school already before restricted admission, thus relating a constant number of 660 GPs per year to the fixed number of places in medical school is presumably an overestimation.

We rather assume that 2016 signifies the shift of the annual number of GP registrations to a lower level, due to a combination of reasons:

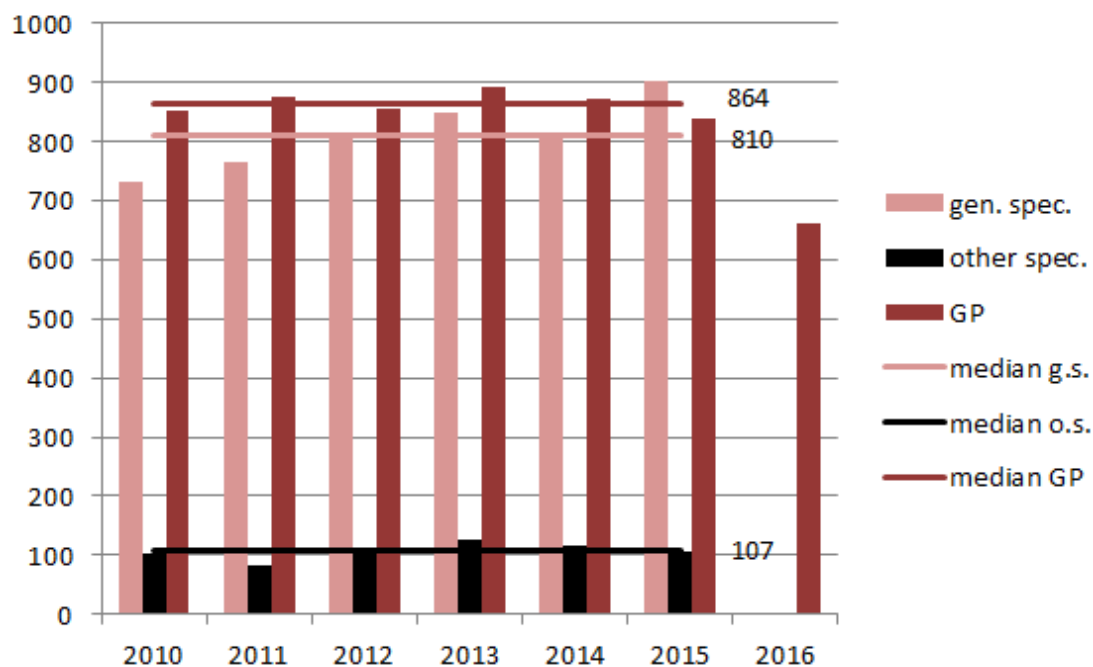
- 2016 is the first year that graduates under the new admission regime on medical schools can achieve a registration as licensed physician in Austria (2006 + 6 years medical school + 3.5 years *Turnus*/internship).
- In spite of the large number of reform activities affecting the medical profession, GPs are still not recognised as specialists in Austria, which reduces the incentive to choose this career.
- There is a high degree of dissatisfaction due to the lack of transparency concerning the internship in the practice setting (*Lehrpraxis*), including an insecure financing situation. Furthermore, there is some criticism that 6 months of training in a practice (out of 42 months) is not sufficient for independent

work in a practice. This again might draw some young physicians devoted to general practice to internships or even a career abroad.

- There is a high degree of dissatisfaction with the expected combination of workload, income and perhaps also appreciation during internship, especially when compared to internships abroad (this problem, however, is the same also for interns in specialties). There are reports that interns could earn three times more (e.g. in Germany).
- And finally, there is a high degree of dissatisfaction due to the missing information about what work in primary care in Austria looks like, under what conditions, in which teams, with which other health professionals in the near future.

The combination of these reasons reduces the attraction of a career as GP in Austria.

Figure 127: Number of board certifications by specialty group, head counts and median 2010-2015



Source: Chamber of Physicians (personal communication), IHS.

It should be kept in mind that some of these shortcomings apply also to the career as a specialist. The internship for specialists takes longer, and we do not have any data on the number of persons currently in internships for specialties. We assume that a somewhat less pronounced drop in specialist registrations will occur in 2018, compared to the drop in GP registrations in 2016.

Retirement of physicians

In 2014 following recommendations of the Austrian Court of Auditors (400), a reform of the *Wohlfahrtsfonds der Ärztekammer für Wien* reduced the level of mandatory contributions of active physicians and continued switching the basis of physician-specific retirement pensions towards the principle of equivalence, thus reducing the generosity of their retirement pension system. Also the *Wohlfahrtsfonds der Ärztekammer für Niederösterreich* was reformed and contribution levels reduced slightly earlier. As some older physicians now expect lower income during retirement than anticipated before the reform, this might delay retirement decisions somewhat.

Physicians contracted by sickness funds can determine their contract conditions only to an extremely limited degree, as most conditions are laid down in general contracts (*Gesamtvertrag*) between the Chamber of Physicians and the respective sickness fund. Until recently, retiring physicians could 'sell' their practice including the documentation of their patients to their successors. The current *Gesamtvertrag* for Vienna and Lower Austria, however, stipulates that payments to the successor cannot exceed 33% of the annual turnover. This regulation reduces possible payments considerably compared to usual payments for well-established practices before. This perceived 'income loss' at retirement may further delay the retirement decision in some cases.

According to ASVG §342, contracts⁸⁷ between GKKs and physicians have to be terminated when the physician reaches the age of 70 years at the latest, but other regulations can be agreed upon to avoid undersupply.

Summary of measures already taken to increase availability of physicians

- Restriction of admission to public medical schools reduced the average duration of time at medical schools and reduced drop-out rates to internationally comparable levels, but reduced also the average number of persons graduating from medical school.
- Opening a fourth public medical school (Linz) will make up for a fraction of this decline.
- A quota for national students at medical schools has been introduced.

⁸⁷ This regulation applies to contracts drawn up after 31.12.2010, several sickness funds added a phasing-out rule for older contracts.

- Changed regulations for the obligatory physicians' retirement funds and for 'selling' the practice to successors reduce financial incentives for premature retirement of practicing physicians, thus prolonging the active working years per physician.

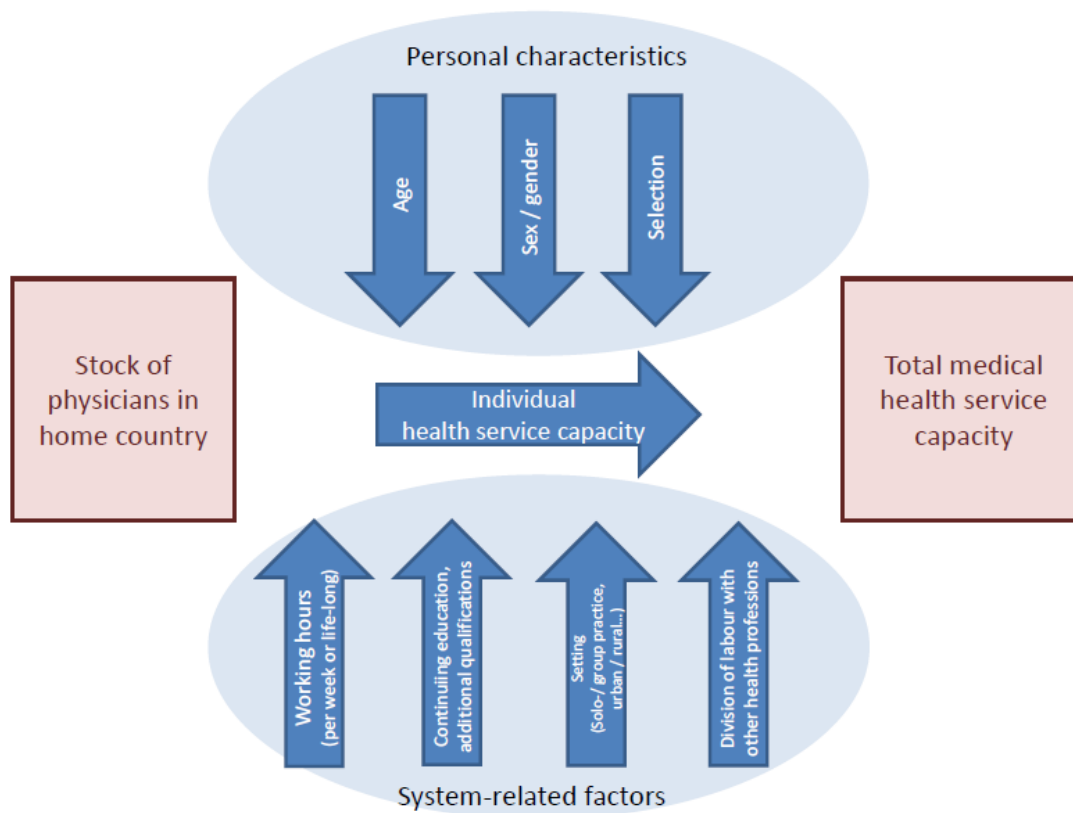
6.5.2 Measures to increase the productivity of the available stock of physicians⁸⁸

While section 6.5.1 is devoted to discussing measures to increase the future number of physicians in Austria, this section discusses measures to increase the productivity per professionally active physician. Ideally, productivity in this context would be meant as *overall capacity to care for patients over the lifetime*, but we cannot measure such a concept. We therefore refer to measures like *patients seen per time unit* for physicians contracted by sickness funds and *working hours per person* for physicians working in hospital.

In this context, two groups of factors can be distinguished which influence the individual productivity: system-related factors and personal factors, see Figure 128.

⁸⁸ In technical terms, productivity is measured in pure output/input terms, and does not take into account outcomes or quality.

Figure 128: Personal and system-related factors affecting the available capacity of physicians



Source: IHS 2017.

Personal characteristics

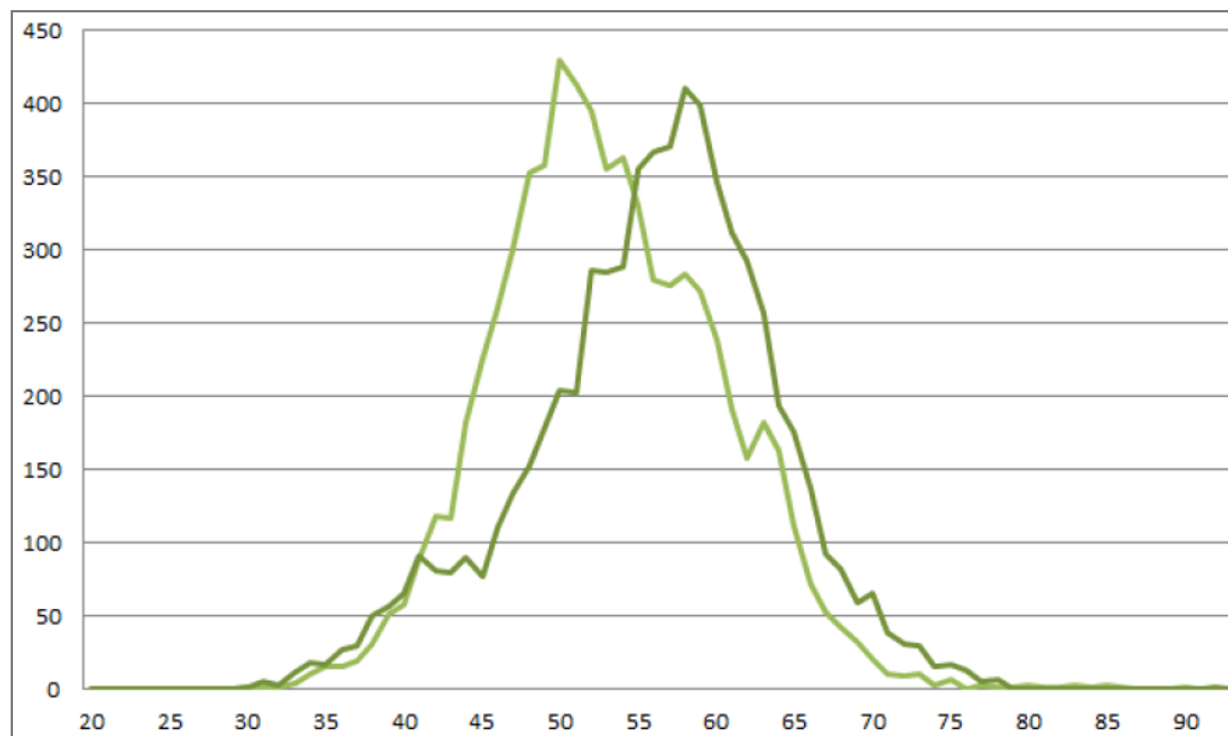
The looming reduction of the physician capacity due to the age composition has only recently begun to fuel the health policy discussion in Austria. For instance, it was shown that the mean age of contracted physicians⁸⁹ rose from 53.1 years (2007) to 55.9 years (2014) (Hauptverband der Österreichischen Sozialversicherungsträger –HVB 2017:28). The report highlights, that about half of all so-called §2-physicians will reach retirement age during the next 10-15 years (389) (HVB 2017:40). Therefore, retirement of physicians has come into focus, resulting in measures which might delay retirement somewhat as discussed above.

⁸⁹ The report refers to so-called §2- contract physicians, which includes holders of contracts with GKKs (regional health insurance funds), BKKs (company health insurance funds) or SVB (farmers health insurance fund).

Less is known, however, about the relative productivity of younger vs. older physicians in Austria. There is hardly any international literature on the relative 'productivity' of younger vs. older physicians. There are, however, studies on consultation length, which forms one of several elements of relative productivity. But this international literature is not clear on whether younger or older physicians have longer consultations per patient. In Slovenia, a survey among GPs found longer consultations for older physicians (401), while a study in six European countries did not find any difference in consultation length between younger and older GPs. Furthermore, the study found that 55% of the variance of consultation length depends on factors on the patient level, with the remainder almost equally split between factors on the physician and on the country level (402). Due to the lack of information in Austria, we do not incorporate any age-related productivity differences into our gap analysis.

Referring to work in own practice, to the best of our knowledge there is no evaluation on whether the number of working hours changes when physicians reach retirement age or the end of their contract, how many physicians reduce their working hours only after they return their contract and keep working in private practice, and how many stop work altogether when reaching this point in time. We therefore assume in the model that starting at retirement age, physicians reduce their workload annually by 50% until they reach the contractual retirement age. For employed (in contrast to self-employed) physicians, we assume that they retire completely at the legal retirement age. Even though early retirement has been quite common in Austria, Figure 130 supports our view of continued professional life after reaching retirement age for a considerable fraction of physicians in own practice, but hardly any employed physicians. We assume a continuation, if not a corroboration of this picture due to the recent policy changes which all in all made retirement more costly for physicians.

Figure 129: Age distribution among so-called §2- contract physicians in single-handed practices, 2007-2014, excluding dentists



Source: Hauptverband der Österreichischen Sozialversicherungsträger (2017:28).

Note: Light green: 2007; dark green: 2014.

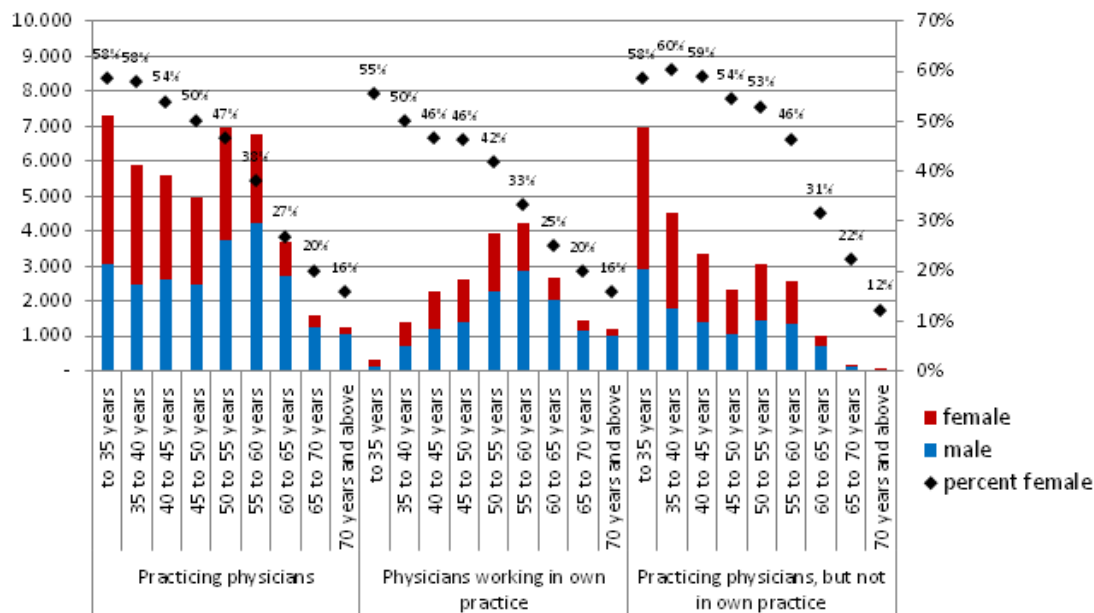
In addition to a de-composition by setting of work (in own practice or not), Figure 130 provides a decomposition by sex. We observe a high female share predominantly among younger physicians, and among those not (yet) working in own practice. Among physicians working in own practice, only in the youngest age group (up to 35 years) there are more women than men.

Policy has responded to the low share of female physicians contracted by sickness funds. The current regulations governing the choice of candidates for the next vacancy as a §2-physician in Vienna and in Lower Austria stipulate that in case of equal number of points, women are to be preferred over men.

We have limited information about sex-related productivity in Austria. Whenever a physician wants to demand payment for a patient's treatment, the patient's eligibility is checked via her/his e-card. Taking these e-card contacts as a rough measure for productivity, we see that in most specialties, male physicians charge for a larger number of contacts per contract period than female physicians. We cannot say, however, whether this difference stems from longer actual practice hours or from shorter consultation

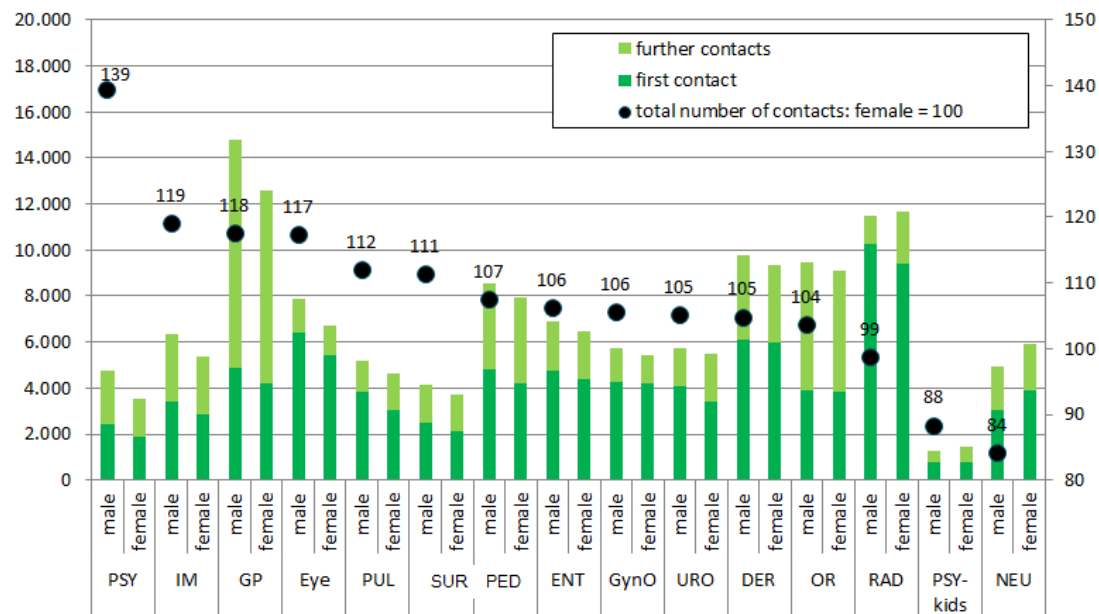
length or sex-related differences in treatment style. Psychiatry obviously is an outlier, with 39% more contacts for men, presumably due to a female preference for a more time-consuming treatment style (i.e. more psychotherapy, less drug-only treatment).

Figure 130: Practicing physicians by age and sex, 2015



Source: Adapted from (403)

Figure 131: Average number of contacts per contract physician, 2015



Source: Adapted from (403)

System-related characteristics: Working hours

In Austria, many stakeholders reacted only very late to the EU-working time directive limiting physicians' working hours to an average of 48h / week. This topic is mostly relevant for physicians in hospitals, as very few physicians with direct contact to patients are employed elsewhere. The *Krankenanstaltenarbeitszeitgesetz* (Act on working time in hospitals) allows under certain conditions, that for a limited time exceptions from the 48h-average can be agreed between employees' representatives and employers:

- Up to 60h/week until 31.12.2017,
- Up to 55h/week until 30.06.2021.

According to a survey commissioned by ÖÄK, actual average working hours among hospital physicians are already 48h/week, and 33% of physicians have signed an opting-out agreement (404). There are, however, rumors that in some cases there was pressure for signing such agreements in order to fulfil – at least on paper – the regulations, or that predominantly young physicians were requested to refrain from documenting some overtime.

Also the opting-out agreement will eventually phase out. We therefore assume that part of the adjustment process caused by the EU working time directive is still under way, but will not be a major effect. In our model calculations, we assume a further reduction of working time by one percentage point in 2016, 2018 and 2021 respectively, and a constant level of 97% compared to the base year 2015 from 2021 onwards.

It has to be noted, though, that phasing out of these agreements might increase demand for physician capacity in times of high retirement rates among physicians. It is therefore extremely urgent to put measures in place to improve the productivity / capacity of individual physicians. Some of such measures are discussed in the following paragraphs.

System-related characteristics: Division of labour between health professionals

The combination of unlimited access to medical schools until 2006 and absence of tuition fees at public medical schools has resulted in a high *physicians/population* ratio in Austria, which among OECD countries has been exceeded by only one country (Greece) according to OECD data. The bottleneck at a prospective physician's career path was timely access to labs and other practice-related training forms, and especially into internship after medical school. Austrian hospitals and their managers could presumably take

advantage of the relative abundance of graduates from medical school: As supply was high, the ones filling the available internships were in a weak position and had to fulfill many tasks that in other countries are performed by other medical professions. We therefore assume that there has been a large (but to the best of our knowledge, still not quantified) degree of misallocation of physician capacity.

This effect partly explains the Austrian paradox of high physician density and population-felt scarcity of physicians, accompanied by long waiting times for appointments with specialists in a growing number of regions and specialties. With the currently lower number of entrants into the medical profession, the traditional (inefficient) division of labour between professions is no longer sustainable. But it can be questioned whether this constitutes a 'real' or an 'artificial' shortage of physicians, thus constituting rather the necessity to re-allocate tasks between health professions (405).

Currently, many hospitals adjust to the fallen number of newly registered physicians by re-organising work (e.g. new non-medical posts for documentation, newly organized procedures before operations or at discharge). To our knowledge, these are grass-root developments rather than a coordinated approach. Legally, hospital owners (*Krankenhausträger*) are responsible for providing the suitable staff and skill mix, certain kinds of health workers are mentioned as necessary but without stating a required minimum quota. Human resources planning is delegated to 'suitable persons' in the individual hospitals or hospital groups, who annually report to the regional government.⁹⁰ Also national and regional hospital plans (ÖSG, RSG) do not explain how the amount of necessary staff and their skill mix are to be calculated (406). For the period 2006-2015, a comparison of the development of three groups of staff in publicly financed acute care hospitals (*Landesgesundheitsfondsfinanzierte Krankenhäuser*) still showed the by far highest growth rate among physicians (15%), compared to all other health workers (6%) and non-health employees (+3%)⁹¹. Thus, we see room for efficiency enhancing developments here, especially if sufficient transparency allows benchmarking and learning from each other.

Unlike other countries, there has been no systematic process of creating or up-grading new professions to support physicians (e.g. nurse practitioners, physician assistants), as has been the case in Germany, the

⁹⁰ KaKuG § 8d. Die Landesgesetzgebung hat die Träger von bettenführenden Krankenanstalten zu verpflichten, regelmäßig den Personalbedarf, bezogen auf Berufsgruppen, auf Abteilungen und sonstige Organisationseinheiten, zu ermitteln. Die Personalplanung, insbesondere die Personalbedarfsermittlung, der Personaleinsatz und der Dienstpostenplan, ist hierfür fachlich geeigneten Personen zu übertragen. Über die Ergebnisse der Personalplanung ist durch die kollegiale Führung bzw. in Krankenanstalten, in denen keine kollegiale Führung besteht, durch die für den jeweiligen Bereich Verantwortlichen, jährlich der Landesregierung zu berichten.

⁹¹ http://www.kaz.bmgf.gv.at/fileadmin/user_upload/Personal/4_G_Personal_LGF.pdf

Netherlands, and UK. Also certain other health professions can work with more independence from physicians internationally, e.g. physiotherapists with respect to prescribing (407).

In Austria, some efforts were made, for example, by transferring the necessary educational path for some health professions from former 'academies' to universities for applied sciences, thus integrating the educational structure into the European Bachelor-Master system. Examples for these professions are physiotherapy, ergotherapy, speech therapy (408). It is, however, not clear whether the perceived low esteem for other-than-medical health professionals could be also lifted in course of lifting the educational path on the academic level.

A new law for the nursing education has been enacted in 2016. This law incorporates three supposedly permeable levels of education (one year/two years/ three years) and lifts the highest of these on the bachelor level. There is still some criticism that even in the brand-new law, the nursing profession is still very hospital-oriented and does not yet sufficiently reflect new roles like practice nurse, community nurse or school nurse. Several tasks that are planned for Primary Health Care Centers are tasks for specialised practice nurses in countries like Australia, Canada, Netherlands, New Zealand, and UK, with comparable outcome and costs (IAMEV2016:122). But the newly regulated educational path for nurses does not seem to incorporate these tasks into their realm, which might provide obstacles for the efficiency and long-term sustainability of the new form of primary care in Austria. Therefore, even though the concept for Primary Health Care Centers requires nurses in the core team, there are still many questions open, for example, regarding their role in PHC, how they will be prepared for their role in PHC as opposed to hospital care, and last but not least the available number of properly trained practice nurses.

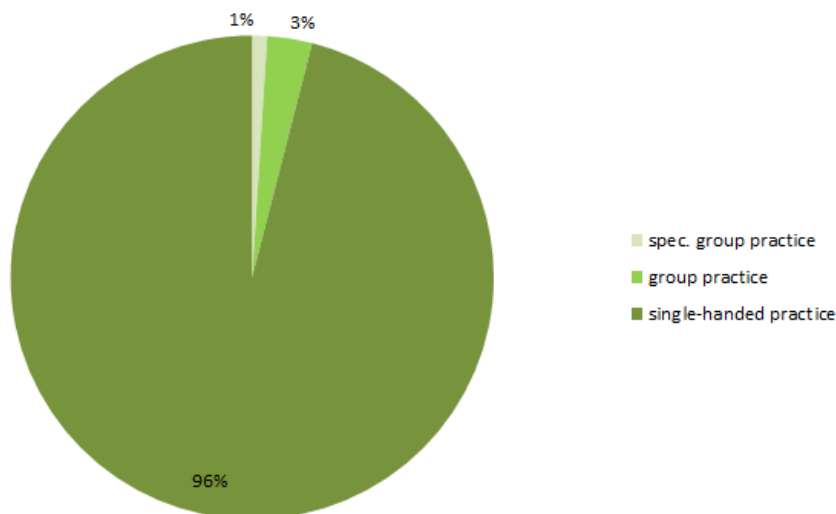
System-related characteristics: Practice settings

In general practice, Austria has a long and prevailing tradition of single-handed practices. There have been long discussions between the Chamber of Physicians and the sickness funds regarding partly replacing single-handed practices by group practices. Technically, the law allows for group practices, but as physicians are under contract with sickness funds on a personal and individual level, and physicians are not allowed to employ other physicians, the creation of a legal framework that is attractive for many physicians has not yet been agreed upon. Difficulties seem to concentrate mainly on financial issues, but also on questions of liability.

Therefore, 96% of all practices are still single-handed, as Figure 132 shows for physicians with §2-contract. Group practices are often formed when older physicians have sons or daughters who are also physicians

and plan to take over their parent's practice (and contract!) after their retirement: if they act as a partner in a group practice for a while, it is easier to achieve one of the few slots in the 'Stellenplan'.

Figure 132: Practice settings among so-called §2-contract physicians, 2014



Source: (389)

Notes: spec. group practice = group practices with shared contracts, part-time contracts and other special forms. Includes general practice and all specialties, excludes dentistry.

The predominance of single-handed practices is found all over Austria: In no *Bundesland*, the share of single handed practices lies below 93%. Special group practices are concentrated in Upper Austria and Salzburg, 'normal' group practices in Vienna (389).

Summary of measures taken to increase productivity of physicians

- Reactions to accommodate the EU-working time directive were introduced extremely late. In most *Bundesländer*, negotiations between (Chamber of) physicians and public hospital administration were started only one or two years before the transition period expired. The chance to better coordinate the skill-mix between health professions (including physicians) already on the educational level was largely ignored.
- The education for medico-technical professions like physiotherapist was elevated to the bachelor degree, which might serve as a means to improve cooperation between and acceptance of other health workers and physicians.
- Similarly, the compulsory education level for nurses was also elevated to bachelor level, at the same time introducing two schemes for nurse assistants.

- In our opinion, the raised educational level can form just one element of a necessary multi-pronged approach to improve such cooperation and mutual acceptance and respect.
- The health reform 2013 envisaged the implementation of new settings of primary care, later defined as PHC units, which were planned to cover roughly 1% of the population in each *Bundesland* by the end of 2016, according to officially set goals (*Bundeszielsteuerungsvertrag Art. 6*). This goal was missed, a fact that seems closely related to missing clarity concerning financing, payment and organisational issues.

6.5.3 Policy options: Demand and supply of physicians

Policy options to increase availability of physicians

To better cope with the rising share of women among physicians and the increasing desire for a good work-life balance among both, male and female physicians, support measures to balance private life – especially care obligations for children as well as the elderly – and job demands. Considering the difficulties in recruiting suitable physicians for remote areas, special efforts will be needed, for example, in developing attractive models to provide out-of-hours care.

Reduce incentives to emigrate from Austria. Provide clarity over the future working conditions as a physician in Austria. Make work at the start of the career as physician more attractive and more calculable, by offering working conditions (including payment, cooperation possibilities in teams, but also work-life balance) that is comparable to conditions abroad, especially Germany. This refers to the number of working hours during internship, but also to the payment.

To reduce brain drain via migration at the transition between medical school and professional training as specialist, revise/improve training programs and ensure that sufficient time for actual training – rather than care provision – remains for both, trainers and trainees. Check if working time directive compliance necessitates prolongation of training periods, especially for specialists who need also dexterity, not only knowledge.

Policy options to increase productivity of current physicians

- Considering the low reputation of primary care as opposed to ‘real specialists’ in Austria, efforts need to be put into improving this reputation. Considering Austria’s low achievements in primary care in international rankings (Kringos *et al.* 2013) it is worth checking whether additional training for GPs in order to fulfil their envisaged role in the new PHC units is necessary. Furthermore, a clear, well-aligned

and well accepted delineation of tasks between PHC units and hospital outpatient departments might improve efficiency of service provision.

- We still perceive a lack of supportive health professionals for GPs and perhaps also specialists, who could free them from some workload in their practices, thus improving the efficiency of physicians' working time.
- The lack in supportive health professionals for GPs is not only an issue of quantity, but very much also a lack of adequately designed and aligned professional roles.
- Development of such professional roles (like advanced practice nurses, more responsibilities for certain well-trained health workers) will necessitate that the physicians' job description will be redesigned, i.e. delegation of some relatively 'low skilled' tasks to other health workers, in order to enable physicians to focus more on core physician tasks, in hospitals as well as in practices.
- At the same time, this endeavor will necessitate that these professionals are adequately educated and trained. We do not see that the recently reformed nursing law already respects the special demands for nurses' roles in the envisaged PHC units, and therefore would support development of a clearer profile of the nurses' role in PHC.
- Obviously, professionals like nurses do not only need adequate skills, but also willingness to take over additional and responsible tasks. This includes also acceptance of the medical responsibility (where the task is suitable for this), while physicians need to be willing to hand over such responsibilities. To improve the acceptance of the new role by the involved professionals, it might be helpful to involve all professions – not almost exclusively physicians – in the development of these roles.
- Seeing the large number of physicians nearing retirement age, we assume that such shifts in skill-mix in the overall health workforce cannot be achieved by focusing exclusively on new entrants into the workforce. We rather assume that to some extent it will also be necessary to coach and motivate existing professionals to adjust to re-allocations of some tasks and responsibilities.

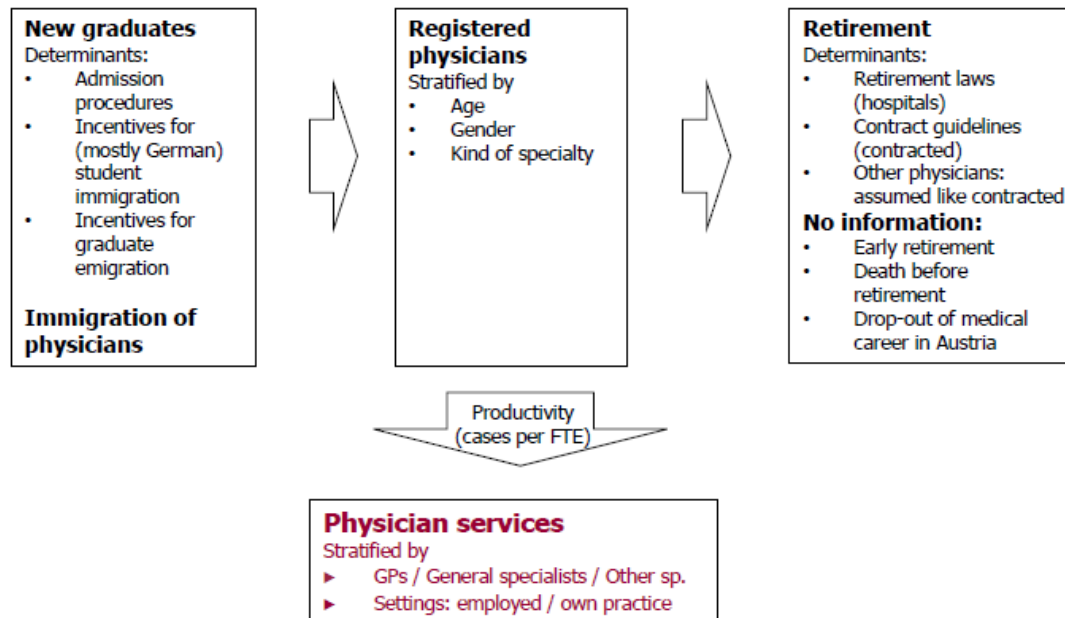
Legal considerations

Even though no particular constitution impediments have to be faced with respect to these options, some amendments to the professional law for nurses and similar groups (such as the Gesundheits- und Krankenpflegegesetz/GuKKG) as well as to the current system of contractual agreements would be required (see also Volume 2 – Legal Analysis (Chapter 7.4)).

6.5.4 Demand and supply of physicians: inflow-outflow model

In calculating potential future demand for and supply of physicians, we adjust and extend the inflow-outflow model applied for a gap analysis of psychiatrists in Austria (409). We model three groups of physicians separately, general practitioners (GPs), and general specialists⁹² (GS) and other⁹³ specialists (OS). Projections were calculated for 2017-2030.

Figure 133: Inflow-outflow model for physician capacity in Austria



Source: IHS.

Data sources and assumptions – physician supply

For physician supply, the Chamber of Physicians provided data segregated by age, sex, contractual status (exclusively employed physicians / physicians in practices: contracted and non-contracted), and medical field (general specialists: GS / other specialists: OS / general practitioners: GP). This detailed dataset was provided for the year 2016. Furthermore, the Chamber of Physicians provided the annual number of new

⁹² Anästhesiologie und Intensivmedizin, Augenheilkunde und Optometrie, Allgemein-, Gefäß-, Herz- und Viszeralchirurgie, Frauenheilkunde und Geburtshilfe, Hals-Nasen-Ohrenkrankheiten, Haut- und Geschlechtskrankheiten, Innere Medizin inklusive Kombinationsfächern, Kinder- und Jugendheilkunde, Lungenkrankheiten, Mund-, Kiefer- und Gesichtschirurgie, Neurochirurgie, Neurologie, Orthopädie, Plastische Chirurgie, Psychiatrie, Thoraxchirurgie, Unfallchirurgie, Urologie.

⁹³ Technical specialties like radiology and lab medicine but also specialties with extremely low numbers.

registration as specialist or GP for the period 2010 – 2015 (GP: until 2016). For this information, however, we have only a single number per year and specialisation without any further stratification by age, sex, nationality, place of education, setting of work, or other characteristics.

Measuring inflows

All entrants were modeled as 30 years of age (GPs: 27 years) which is certainly inaccurate but does not pose any bias due to the short projection horizon. Sex of entrants was modeled proportional to the sex of medical graduates in 2015, which is close to 50:50.

All inflow proportions are based on graduates from public universities only. Our database does not include graduates from private medical schools (Salzburg, Sigmund Freud, Krems), which presumably does not pose serious biases as: (a) projections are retrospectively based primarily on new registrations in Austria, irrespective of the place of medical education, thus including graduates from the small⁹⁴ Salzburg medical school: while (b) Sigmund Freud and Krems cannot contribute graduates from specialist training any sooner than in the last two years of our projection period.

For GPs⁹⁵, the inflow into the pool of physicians was based on the median of observed registrations per specialty during the period 2010-2015 (Figure 127). Starting from this number, we model certain changes in the number of annual entrants:

- The introduction of strict admission regulation in 2006 reduces the number of registrations by 15% from 2018 onwards⁹⁶.
- Taking nationalities of medical students into account, net migration reduces the number of registrations by 10% throughout our projection period (see Figure 126).
- Due to the envisaged promotion of primary care, we assume a shift of 5% of internship training capacities from specialist to GP – training. This is the only mere assumption which was not based on observed data.
- 70 additional GPs per annum are expected due to the new medical school in Linz from 2026 onwards. For these graduates, we assume the same proportions (sex, migration, specialties) as for other graduates.

⁹⁴ 50 students per year start medical school since 2002.

⁹⁵ We do not calculate others specialists due to their heterogeneous structure and small number.

⁹⁶ $(\text{median } 2012\text{-}2015) / (\text{median } 2002\text{-}2011) = 0.85$

For GPs, the inflow into the pool of physicians was based on the observed number of new registrations in 2016 (660) for the whole period 2017-2030. In Figure 127, a sharp decrease in the number of new registrations between 2015 and 2016 can be observed, which we interpret as the result of the restricted admission to medical school since 2006. Note, though, that in the following years the number of new registrations might be somewhat lower since the observed 660 new registrations might include students who started before 2006 but could not finish medical school in minimum time. Further assumptions for modeling future new GP registrations are:

- An inflow reduction of 10% due to net migration.
- A shift from specialist to GP training places, increasing GP training capacities by 5%.
- Additional 57 new GP registrations per year due to graduates from Linz for the period 2024-2030.

Modelling outflows

We do not have any hard data on outflow patterns; further, we cannot derive outflow patterns from age distributions of two consecutive years as we received the age distribution for 2015 only. Taking the – compared to other professions – late entry into fully autonomous professional activity into account, we therefore use the legal retirement patterns to model outflows. We do not model premature outflows from the physician workforce due to reasons such as migration, shift to other work without contact to patients, illness, disability, death. Because we do not model premature outflows, our projections might bias capacities upwards.

As physicians often work in a private practice or with a sickness fund contract even after legal retirement age, we assume that after retirement age, ‘productivity’ of physicians drops each year by 50%. We assume this drop in productivity starts at age 66 for men as well as women throughout the period 2016-2030. Due to legal restrictions, we further assume that full retirement begins at increasingly lower age, starting at age 74 (2016) until age 70 (from 2019 onwards).

Data sources and assumptions – physician demand

Unfortunately, it is not possible for us to model true demand for physician capacity in the same way as economics textbooks would define ‘demand’. Like most analyses of physician capacities, our calculations for physician demand are based on observed patterns of physician utilisation. If current (or rather: most recently observed) utilisation was restricted by insufficient capacities, any calculated supply gaps would be underestimated. Considering that Austria currently still boasts higher physician/population ratios than most countries, we would assume that we need not worry about undersupply for the base year on the

national level. Having discussed the issue of demand versus utilisation, however, we need to stress that undersupply can as easily be caused by wrong resource allocations as by low capacities.

We have two separate data sources for service utilisation in inpatient and outpatient care. For **inpatient care**, the Ministry of Health and Women's Affairs provided information on the number of inpatient stays by function code. We model the future development of physician demand in the inpatient setting as depending on two factors: previous development of utilisation, and future demography. The rationale for previous utilisation as a determining factor is that existing capacities form an upper limit of utilisation; thus also limiting future growth of the number of inpatient stays. Considering the high correlation between share of older population and number of inpatient stays, we assume that the number of inpatient stays (and thus demand for physician services) will pick up in line with the increase in the share of the 65+ population in 2020.

For **outpatient care**, the Main Association of Austrian Social Security Institutions provided the number of e-Card consultations at contracted physicians. We thus model the demand for physicians' outpatient services in line with the past development of consultations and with the population forecast.

To translate the demand for physicians' services into demand for physicians, we need to define **physicians' productivity** in terms of number of services or caseload per physician and time period. We model these in accordance with observed productivity in past years. For future development of productivity, we adjust for two factors:

First, the future stock of physician capacity contains increasingly more women, compared to the past. During their reproductive phase, women are more prone to absences from work and are protected by maternity laws limiting certain kinds of work like shift or night work. Furthermore, informal care work (child care, elderly care) traditionally rests more heavily on women than on men, which might pose additional burdens on their availability for full-time work or overtime. Lower caseloads by female compared to male physicians are supported by the data on e-card consultations, see Figure 131. We therefore model female specialists with 0.93 FTE per person and female GPs with 0.85 FTE per person, while male physicians are modeled as 1.0 FTE per person. We apply this proportion to the outpatient and the inpatient setting alike.

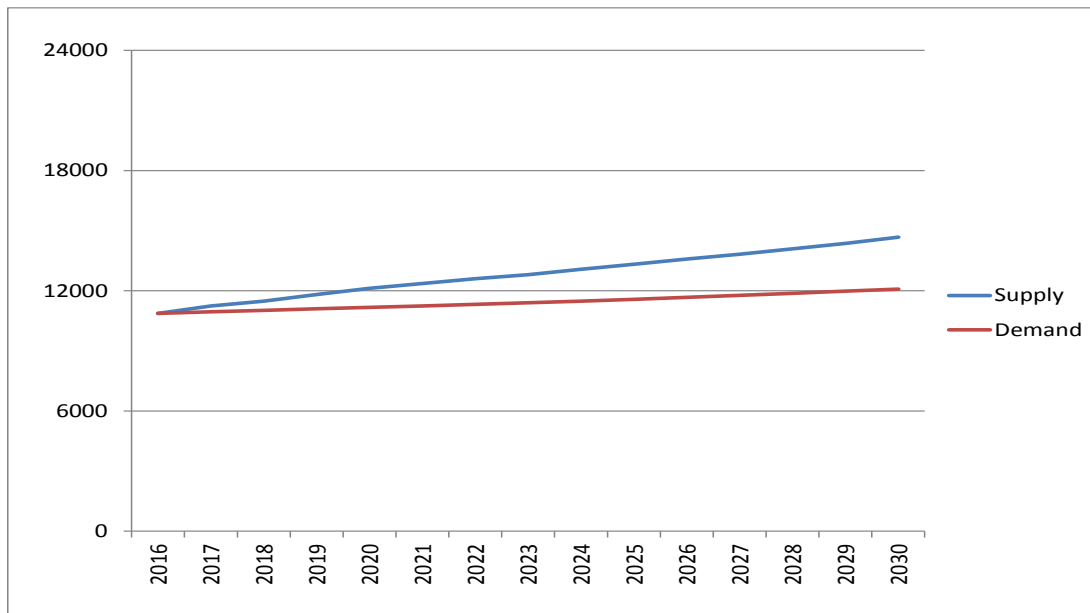
Second, the EU working time directive has not yet been fully implemented in Austria. As explained in 6.5.2, we assume a further reduction of working time by one percentage point in 2016, 2018 and 2021 respectively, and a constant level of 97% compared to the base year 2015 from 2021 onwards.

Results

Applying the assumptions sketched above, we calculate projections for supply of and demand for physicians for two groups of physicians (GPs and general specialists) in two scenarios (Scenario 1: utilization in 2016 represents exactly demand, scenario 2: utilization in 2016 represents 3% undersupply). Figure 134 to Figure 137 show a graphical representation of the projection results.

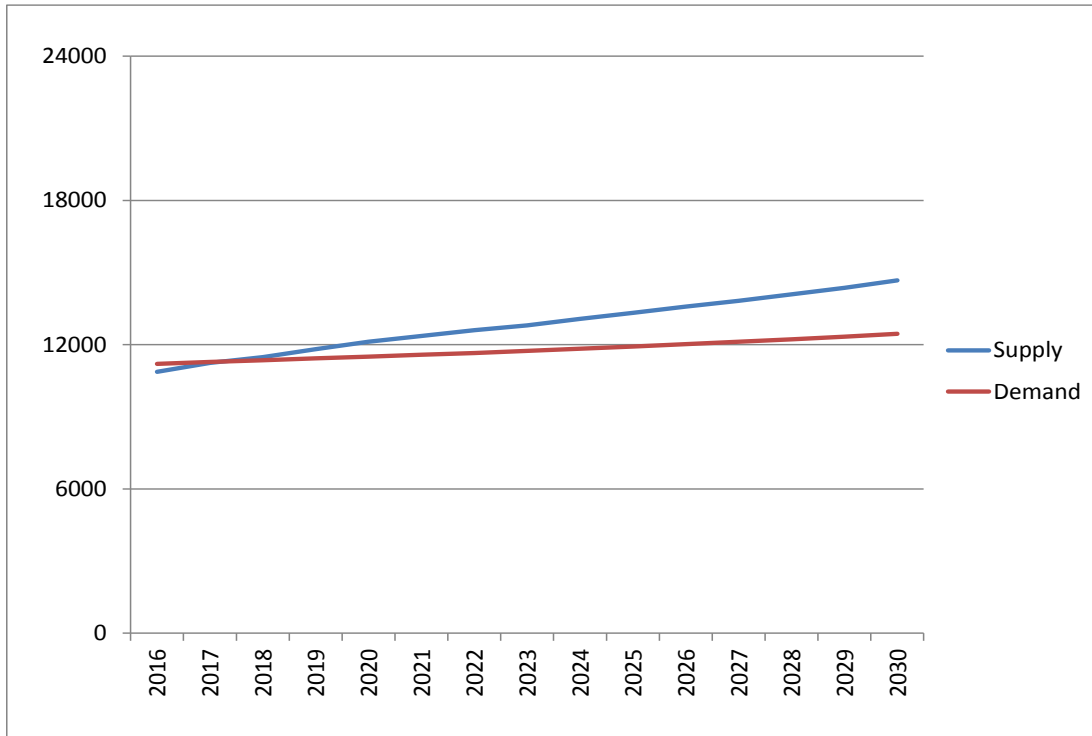
According to our projections, for the entire projection period (scenario 1) or starting from next year (scenario 2) there will be an over-supply of GPs which will keep growing throughout the projection period, amounting to almost 2,500 FTEs or about 21% of demand across Austria in 2030. For general specialists, we expect a far smaller over-supply, but only in scenario 1 and for about 7 years. For both scenarios we calculate that supply fails to meet demand for general specialists in 2030, in scenario 1 by 9% (ca. 1700 FTEs) and in scenario 2 by 11% (ca. 2300 FTEs).

Figure 134: Gap analysis for GPs 2016-2030, scenario 1, FTEs



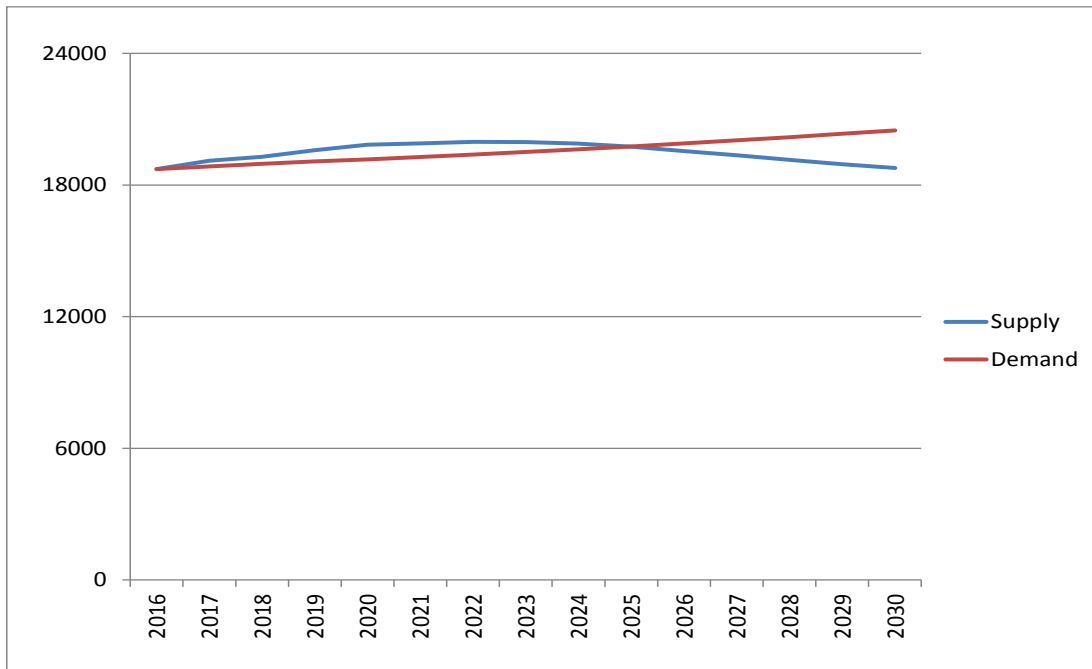
Source: IHS 2017.

Figure 135: Gap analysis for GPs 2016-2030, scenario 2, FTEs



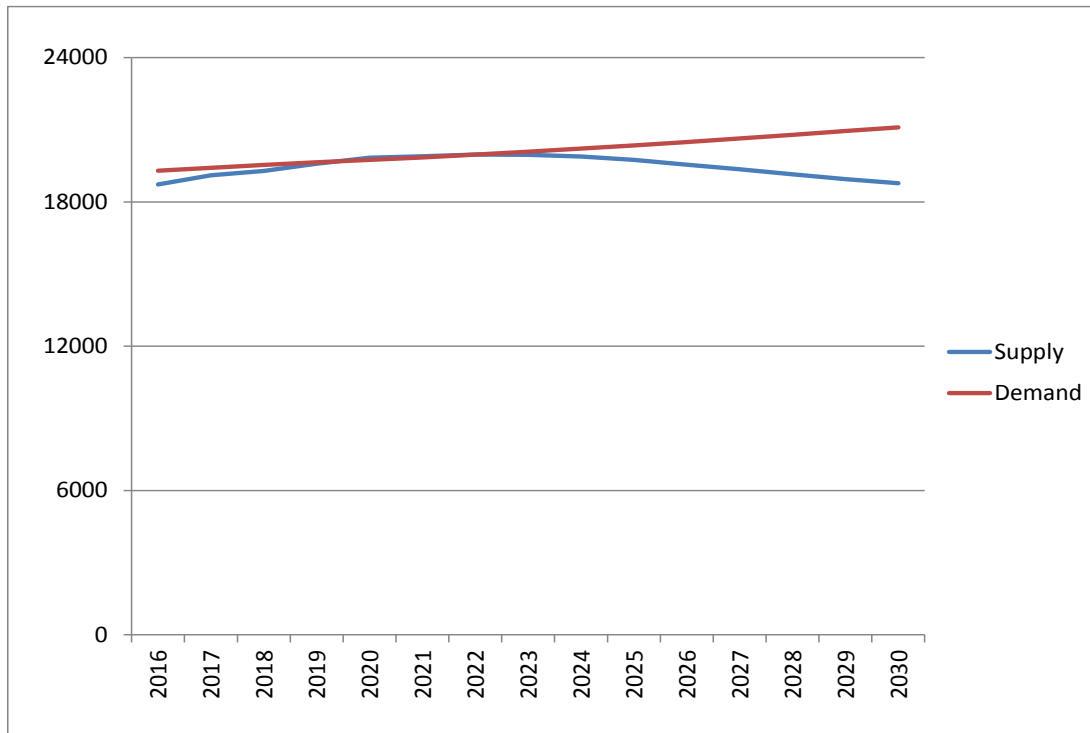
Source: IHS 2017

Figure 136: Gap analysis for general specialists 2016-2030, scenario 1, FTEs



Source: IHS 2017.

Figure 137: Gap analysis for general specialists 2016-2030, scenario 2, FTEs



Source: IHS 2017.

6.5.5 Discussion

It has to be kept in mind that these projections are purely quantitative and are calculated on the national level. Thus, they abstract from regional mismatches like simultaneous oversupply in urban and undersupply in rural areas⁹⁷. Likewise, also mismatches between medical specialties are not taken into consideration, for example, we do not ask if we will have a sufficient number of gerontologists in 2030. Furthermore and perhaps more important, we cannot judge in how far qualifications of physicians actually meet the qualification demands of their workplace and their patients' conditions. The latter caveat applies not only, but especially to primary care.

Another caveat applies to the setting of work. We calculate overall supply of physicians. For physicians with practice, we do not calculate separate models for contracted and non-contracted physicians, which can seriously affect their workload. For certain specialties, this problem is more serious than for others:

⁹⁷ The issue of undersupply of physicians in rural Austria was discussed in the context of international best practice examples in Cypionka et al. (2012).

for example, many women preferring female gynecologists do not find contracted ones with reasonable waiting times and therefore retreat to non-contracted female gynecologists (410).⁹⁸ Across Austria, 40% of all GPs and 63% of all specialists with practice are not contracted. The high number of non-contracted specialists with practice needs to be seen in the context of typical working times in Austrian hospitals. In many hospitals, afternoons are not very busy, and many hospital-employed physicians run a private practice alongside their full-time hospital job. This can make sense if they succeed in attracting patients with private insurance, who – if cared for by them in hospitals – can provide a handsome additional income for these physicians. Nevertheless, these physicians provide also outpatient care, even though their role in the excessive number of hospital stays per person in Austria remains unclear.

We stressed already before that our calculations start from the assumption of more or less met demand in 2016. This assumption is made for technical reasons, which means that all interpretations regarding under- and oversupply are to be made with reference to the situation in 2016, and not with reference to ‘optimal’ supply levels. We are quite sure that we do not start from a situation with (overall) undersupply in 2016, but from a situation with significant misallocations in several dimensions: regional (urban oversupply, especially in the Vienna region, but also within *Bundesländer*), regarding setting of work and presumably also contract-status, regarding specialties, but also regarding the overall health workforce, as was already explained elsewhere in this chapter.

6.6 Monitoring and information needs

6.6.1 E-Health in Austria

Political and legal background

Following international developments in the area of e-health, Austria has initiated work on an electronic health record system (elektronische Gesundheitsakte, ELGA) since 2006. The information system enables the electronic documentation of patient health records and facilitates communication between patients and health service providers. The aim is to improve the quality and efficiency of health care provision through a standardised documentation of information and prevention of duplicative care. As such, the

⁹⁸ The question why in other countries a substantial part of their work is included in general practice - thus a field with many women doctors – fits again the discussion of possible misallocations and problematic skill-mix.

application is of particular importance to the care of elderly and dementia patients, who experience increased difficulties in maintaining an overview of all treatments received. Therefore, a working group (*Arge ELGA*) was set up by the Ministry of Health, together with the Main Association of Social Security Institutions, the federal health commission (*Bundesgesundheitsagentur*) and the federal states, in order to conduct preliminary feasibility studies and a detailed planning of the project (411,412).

The collaboration between the federal government, the federal states and social security led to an agreement on the content and financial implementation of ELGA as part of the 15-A framework treaty on the organisation and financing of the Austrian health system in 2008, and was further substantiated in the Federal targets agreement (*Bundeszielsteuerungsvertrag*). The efforts culminated in the creation of the ELGA GmbH in 2009, an implementation organisation, which is owned by the aforementioned collaborators (411). To date, the ELGA project constitutes one of the largest harmonisation processes in the health care system to standardise the infrastructure and regulations pertaining to health data.

In addition, the legal basis for the processing of electronic health data was specified in the ELGA Act in 2013, which constitutes an extension of the Health Telematics Act 2005, EU Data Protection Directive, Data Protection Act 2000, Medical Law 1998, Law on Documentation and Federal Law on Hospitals and Cure Facilities, among others (411).

Implementation of ELGA

ELGA GmbH

The ELGA GmbH, established in 2009, is a non-for profit limited liability company owned by the federal government (represented by the Ministry of Health), federal states and social insurance (represented by the HVSV). The line of business includes the coordination and integration of all operative measures regarding the implementation of ELGA, the establishment of system components and support of pilot projects pursuant to the provisions of the federal health commission, as well as the quality- and acceptance management. The key tasks encompass the on-going development of the IT architecture and standards (including standards that are in line with international developments), the overarching programme control over all necessary projects, the further development and control management of information security, as well as public relations. Therefore, the ELGA GmbH is dealing with the planning, monitoring and evaluation of all technical and organisational arrangements, including the monitoring of the individual implementation stages in accordance with the regulations and time schedule (412,413).

The financing of the company ensues in line with the agreement pursuant to Article 15a of the Federal Constitutional law on the financing and organisation of the health care system. Hence, expenditures for the establishment and operation of the central infrastructure are jointly borne by its owners and may amount to a maximum of EUR 60 Mio for the period 2008-2016 (15a B-VG, Punkt 38 Article 30 Abs. 6). Furthermore, an additional EUR 41 Mio were allocated for the period 2017 to 2020 (413).

Implementation phases

(1) In January 2014 the ELGA internet portal was set up, which enables insured persons to access, print and download their personal health records. In addition, the portal allows individuals to partially or fully opt out of the ELGA system, as well as to opt in again – either online or via a written statement to the responsible authority. Furthermore, individuals can authorise and manage a health care professional's access, as well as duration of access, to the files. The authentication process to access the portal is done through the so-called Citizen Card (*Bürgerkarte*) or a transaction code via mobile phone (411).

(2) Following technical and organisational difficulties in the simultaneous initiation of ELGA across all nine regions, which had been foreseen for the beginning of 2015, a gradual phasing in was assented to. Given their previous advances in e-health, Vienna and Styria were announced to lead the pilot. Following, the connection between the affinity domains run by public hospitals, as well as nursing care facilities, and the central ELGA components was started in December 2015.

(3) In 2016, the phasing in continued across the remaining regions, and by the end of 2017, all hospitals in eight regions are expected to be connected, except for Burgenland.

(4) In the second term of 2016, the e-medication application testing phase was initiated in Deutschlandsberg, Styria. A full roll out of the application is expected by early 2018.

Status quo

To date, approximately 140 health care providers are connected to the system, including hospitals, nursing care facilities, physicians, dentists and pharmacies. This encompasses 100% of all public acute hospitals and 90% of all acute hospitals in Austria. The step-by-step implementation across health care providers is specified in §27 of the ELGA Act; it starts with public hospitals and care homes and continues to expand across pharmacies and physicians, as well as private hospitals. Dentists are expected to join in 2022 (414). However, it must be noted that the intra- and extra mural sectors have a different focus when it comes to employing ELGA. The focus in inpatient care lies on discharge letters, while in the outpatient sector, it is the prescription of medications (i.e. e-medication). As such, there is currently no provision in

the law that requires outpatient physicians to electronically store medical findings, similar to the discharge letters at hospitals. Therefore, gaps in the collection of health information prevail, also due to the fact that patients may decide to opt out of the system.

In order to proceed with the roll out of the system, a political commitment ruled that 80% of contracted outpatient physicians need to integrate ELGA functions into the physician practice-based software by the end of 2017. To date, the number of physicians having completed the integration of functions amounts to approximately 75%. As part of this process, to enable the expansion of the ELGA network across physician practices, the Chamber of Physicians has requested EUR 4,000 per doctor in order to support the upgrade of the information system and software. Concurrent to the expansion of the system, an increasing number of ELGA patient advocates are taking up their duties at patient advocacy offices.

By early 2017, already one of five people in Austria (approximately 1.7 Mio) have already had contact with ELGA, while 3% of all possible ELGA users (approximately 260.000 people) have decided to opt out of the system. More than 4.1 Mio documents have been uploaded, which include physician and nursing discharge letters, medication data, laboratory and image-based diagnoses. Further documents to be included encompass an individual's living will (*Patientenverfügungen*), health care proxy (*Vorsorgevollmacht*), and legal medical registers (*gesetzliche medizinische Register*), as well as a pathology report and a patient summary. Furthermore, the Minister of Health can order further types of information to be included in ELGA via regulations (414). Currently not included is sensitive patient information that was noted and saved in a practice or hospital software, or information on health behaviours (413). According to the Ministry of Health, data should only be made available in the ELGA system if it is of relevance to the present treatment of a patient, if it constitutes an important information basis for aftercare facilities, or if it serves the protection of patient rights or the improvement of patient safety (412). Furthermore, a picture archiving system to store e.g. x-rays and other image-based data has not been implemented yet.

Technical set up of ELGA

IT architecture

ELGA provides for a decentralised storage of health data by storing it at the respective sites of origin or so-called affinity domains (such as hospitals or GP practices), which are also referred to as the ELGA area (*ELGA Bereich*). As such, the original documents are saved in so-called repositories that are found at the health care providers' practice or facility. In addition, there are a number of central components that play

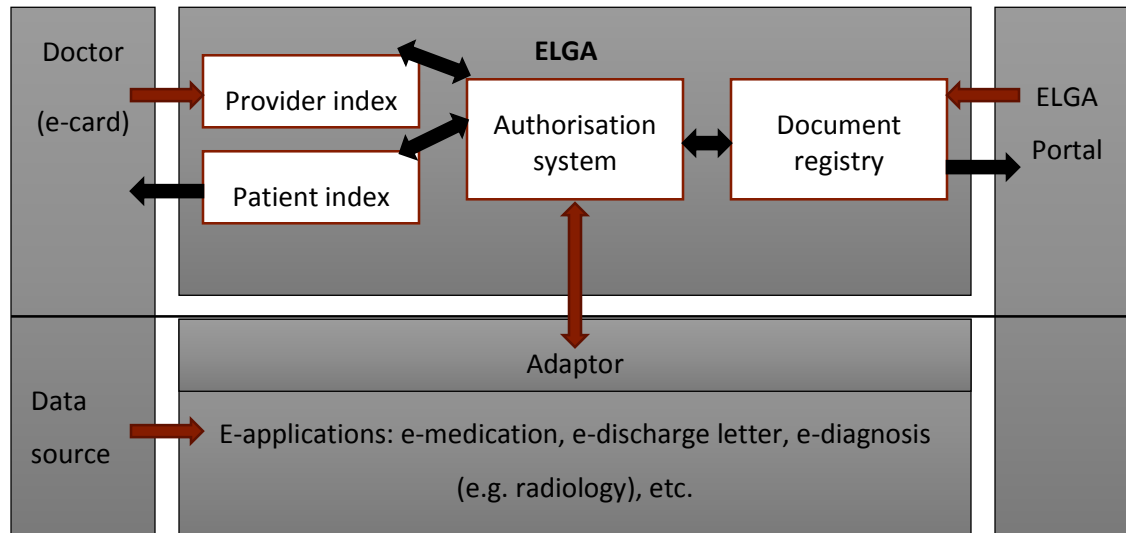
a role in the identification of patients and health care providers, as well as the management of access authorisation. A central database is also found in the e-medication application, i.e. the e-medication account (411). The technical implementation of ELGA is generally based on internationally recognised standards, such as those pertaining to safety (412).

The ELGA Act specifies that facilities need to store specific data in a specific structure, in order to render the data retrievable through ELGA, whereas it does not matter where the data storage is located. Even though the data could be stored in a single or two storage locations in the country, a decision ruled that each of the nine federal states would set up and finance a storage site, in order to also establish an infrastructure for local telemedicine. By the end of 2017, all regions, except for Burgenland, are expected to have set up the storage sites and in addition, the AUVA and two private providers have invested in their own data storages. As such, there are more than enough, if not too many, ELGA data storages to connect all health care providers in Austria.

In practice, the system works as follows. In order to access health data electronically, a treating health care provider needs to enter medical findings (i.e. ELGA documents) into an electronic register. As such, an entry is recorded, which references the document and the location at which it can be found. This document registry only contains meta-data, as well as the links to ELGA documents, which are structured and classified according to the CDA levels (for further information, please see health data structure below).

Other health care providers can then request access to a patient's health records through their own software (e.g. Ordinationssysteme, Krankenhausinformationssysteme), while patients can request access via the online ELGA portal. These requests need to pass the Central Authorisation System, which uses unique patient and health care provider indices to confirm, whether (a) the patient exists and (b) whether the requesting health care provider has the rights to access the information. The patient identification proceeds via a Centralised Master Patient Index (C-MPI), which is also linked to the affinity domains. As such, the index contains both the demographic data of individuals and the record locator service that allows for the locating of the affinity domain that stores the health data. Similarly, health care providers can be identified through a Centralised Healthcare Provider Index (C-HPD), which constitutes a register of all health care professionals and facilities that have legal access to the health data (411,412). The C-HPD is managed by the Federal Electronic Data Processing Centre (*Bundesrechenzentrum*). Please see Figure 138 for an overview of ELGA's IT architecture.

Figure 138: Technical set up of ELGA



Source: Arge ELGA, 2007

Health data structure

In order to render the health information usable across the different IT systems of health care providers (i.e. semantic interoperability), the documents and data must follow technical norms and semantic standards. Therefore, the Federal Health Commission has recommended the Clinical Document Architecture (CDA) as the official document standard. CDA is an international standard for the storage and transfer of health data, based on XML, which also constitutes the reference standard for the public procurement directive of the European Union. As such, the CDA format allows for a standardised saving of documents that is accessible to all ELGA participants. This national harmonisation process of the health data structure, initiated in 2007, involved approximately 200 voluntary stakeholder representatives, such as health care providers and social security representatives, and constitutes a good example of coordination efforts to foster the nation-wide standardisation of content and technology.

In addition, an ELGA reference style sheet has been developed to ensure usability, as CDA documents do not provide for any layout information themselves. The medical and administrative content within a CDA document are separated. For instance, the administrative data is located in the CDA header, while medical information is saved in the CDA body. Currently all documents are standardised in an XML format. While the header information is fully standardised across all health care providers, some providers continue to embed the body content in form of PDF. With regards to the standardisation of the body content, the law

outlines three different levels of ELGA interoperability, where level 1 is a reflection of the current situation, in which most providers continue to integrate body content in a PDF format. By contrast, level 3 specifies that all of the body content information is stored in an XML format. It must be noted that level 3 constitutes a prerequisite for the implementation of a patient summary. Meanwhile, semantic operability can be further enhanced by embedding machine-readable data, which allows e.g. for single data to be imported into the health care provider's IT system and the automatic highlighting of risks (411).

Access to health data and data safety

Health care providers generally have a period of 28 days, starting on the day of treatment or supervision (e.g. by scanning a patient's e-card), to access the relevant health data. The time period is intended for physicians to receive or read into additional information pertaining to the specific case and access can only be activated again in the case of renewed treatment or supervision. By contrast, pharmacies are given a 2-hour access to the list of prescribed medicines. However, individuals can modify these access provisions through their online ELGA portal, by either reducing the duration of access or increasing it to a year (e.g. in the case of a fiduciary physician). Furthermore, as stipulated in §20 ELGA Act, health data is to be de-centrally stored for ten years. In the case of e-medication, the storage of data runs for one year (412).

The protection of data and patient rights play a central role in the implementation of ELGA. For once, ELGA users have the opportunity to hide and un-hide documents, such as in the case if they wish to receive a second, unbiased opinion, or to delete files entirely. Patients may always opt out of the system, given they are not legally obliged to save health data electronically. Furthermore, users can track any downloads or viewings of the files by health care professionals via a protocol system. Concurrently, health care providers may only access patient information in the case of concrete treatment or supervision of the patient, in order to prevent the inappropriate insight into user files and as such to protect patients' personal information (412). The paragraphs 3 to 8 of the ELGA Act are specifically concerned with data security and specify necessary actions when required. For instance, the data transport is encrypted and the network security needs to be updated to the latest technical standards (413). In addition, the storage system is decentralised and communication takes place via own health networks. To prevent the misuse of the system, high penalties were introduced, including fines of up to €10,000.

E-medication

Another important part of ELGA is the e-medication application, which allows for the recording of prescribed and over-the-counter obtained pharmaceuticals in order to identify and prevent contraindications and duplicate prescriptions (414). Given that patients may be prescribed a number of drugs simultaneously and by different health care providers, which may interact with each other and lead to adverse events, the system aims to improve patient safety and quality of treatment.

E-medication is an application (not a document) connected to ELGA, which offers an overview of all pharmaceuticals that have been prescribed and delivered to a patient in the last 12 months. Similar to other ELGA applications, the information can be accessed by patients, physicians, pharmacies, and hospitals (413,414). Furthermore, physicians can transfer the information into their own IT system. Therefore, it constitutes an important prescribing information basis on dosage, contra-indications and duplicative prescriptions, and allows for the electronic verification of possible drug-to-drug interactions, which can be particularly frequent during the simultaneous intake of OTC drugs. A database, which stores information on more than 13,000 combinations of active substances and their possible interactions, forms the basis of the analysis. The database also includes herbal medicine, such as St. John's Wort, that are known to interact with other drugs.

The e-medication testing phase started in the second term of 2016 in Deutschlandsberg, Styria (411). Prior to this, additional pilot projects were conducted in Wels-Grieskirchen, Upper Austria and in Reutte, Tirol, followed by an independent evaluation by the medical university Vienna in 2012 (412). By September 2016, the application had already been used by 11,000 people and encompassed approximately 57,000 prescriptions, as well as dispensing information on approximately 14,000 prescriptions and 9,000 OTC drugs (413). An Austria-wide roll out of e-medication is expected by early 2018, however, the date may be pushed back due to delays.

6.6.2 Policy options: Monitoring and information needs

Identifying synergy potentials between data storage sites

Currently each federal state, as well as the AUVA and a number of private providers provide access to ELGA data storage sites, which already constitutes a large, if not too large, number of costly storage sites that have the capacity to connect all health care providers in Austria. Therefore, cost-effectiveness should be taken into consideration with regards to the number of storage sites and further site establishments

should be avoided. Instead, already established sites should be evaluated, as to whether efficient use has been made of their data storage capacity, and areas of synergy should be identified. These evaluations could be performed by the ELGA GmbH, for example.

Automated electronic prescribing and recall system for medical adherence

Currently not initiated as part of ELGA or E-Medication in Austria, an electronic prescribing (e-prescribing) system (EPS) enables health care professionals, such as physicians and nurses, to write, send and re-fill prescriptions electronically to a (participating) dispenser, e.g. pharmacy, rather than using handwritten or faxed notes. As a result, prescriptions can be processed more efficiently by reducing errors related to illegible handwritten notes or faxes. The system also allows for improved control of prescriptions and reductions in time spent on prescription queries for health care professionals. For instance, patients could receive timesaving information on possible drug-to-drug interactions directly at the physician's office, rather than having to return to the practice for a renewed prescription in the case that interactions were identified by the pharmacist. Concurrently it enables dispensers to have better control of stock and to reduce the paper/administrative burden, while patients could directly collect (repeat-) prescriptions from a dispenser, without the risk of losing paper-based prescriptions, making the dispensing process both more efficient and convenient.

In addition to transmitting electronic prescriptions, the system could be extended to include an automated recall system for patients to support medical adherence. Similar to the already existent recall letter for the annual preventive check-up, a letter could be sent to patients if uncollected prescriptions were identified by the system. The letter would notify patients of uncollected prescriptions and may suggest further consultations with a physician, without naming the actual medication. As such, the recall letter could promote continuity of pharmaceutical care, while simultaneously ensuring confidentiality. The system could be further extended with additional applications that enhance convenience and continuity of care, such as the electronic scheduling of appointments.

E-vaccination

The vaccination status of residents living in Austria is often partially/not reported. Furthermore, documentation on immunisations, such as the paper-based WHO-compliant vaccination record, may get lost, in which case a vaccination database and electronic vaccine record may provide time- and site-independent access to information for both healthcare staff and patients. As such, individuals could obtain an optimised and more convenient overview of their immunisation status and vaccination schedule, while

preventing unnecessary or duplicate immunisations and possible adverse events from drug-to-drug interactions. In addition, a recall system, similar to the existing recall letter for the annual preventive check-up, could be introduced to ensure continuity of the vaccination schedule and thus ill-health prevention. Moreover, the introduction of a national electronic immunisation data collection system in Austria could improve the monitoring and evaluation of immunisation rates, which is currently based on a fragmented reporting system.

Expansion of digital imaging and communications in ELGA

At present, the ELGA database encompasses physician and nurse discharge letters, as well as laboratory and image-based diagnoses. However, a picture archiving and communication system to improve the utilisation of resources has not been fully adopted in ELGA, as the storage of image data is optional. Therefore, the creation of databases for digital images from different medical devices, including e.g. X-rays, MRI- and CT-scans, PC tomography and ultrasound, has the potential to improve site- and time-independent information sharing between medical professionals and health care enterprises, and as such to enhance operational efficiency. A structured representation of image data could facilitate the acquisition of image data objects from multiple sources and systems, in order to directly store these into ELGA. Concurrently, a digital imaging system could enhance patient care by preventing unnecessary repeat examinations, thus reducing radiation exposure for patients and costs to payers.

Standardisation of the diagnosis classification system

At present, the classification of diagnoses differs across different levels of care. For instance, hospitals employ the official WHO ICD-10 codes in order to specify inpatient diagnoses. By contrast, outpatient departments use codes based on the so-called catalogue of outpatient department services (*Katalog ambulanter Leistungen, KAL*) and are only required to specify diagnoses in concrete cases, as stated in the law. Even though the cross-sectoral diagnosis nomenclature for outpatient departments (KAL) was recently initiated as part of the operative goal (7.2.1) in the Health Target Agreement 2013 (*Bundeszielsteuerungsvertrag 2013*), it will take time for health professionals to get used to the new system. Furthermore, there are no defined rules on classifying diagnoses for general practitioners and specialists in the extramural sector. Therefore, the nomenclature differs across individual physicians, and notes on diagnoses may be drafted in the form of a general description, in Latin or a code (such as ICPC-2 codes).

Consequently, diagnoses are currently only available for inpatient care, which comes with a number of limitations. Specifically, it does not provide for a detailed overview of the patient's overall health condition, as hospital care is focused on the treatment of specific conditions that do not necessarily capture other health conditions, such as in the case of multi-morbid patients. For example, a surgeon is less likely to classify psychological diseases. Furthermore, elderly patients and those with dementia may have difficulties recalling all previously diagnosed conditions by GPs and specialists. In addition, outpatient diagnoses tend to be more detailed and give an insight into a range of conditions that may have been diagnosed over a longer time period. Therefore, the inclusion of outpatient diagnoses may constitute a better representation of a patient's medical history and interoperability could be improved by standardising the diagnosis classification system. The latter would further allow for a faster search for specific diagnoses, in the case of the implementation of an ELGA search tool.

Evaluation and monitoring of a patient's medical history

The electronic health records accessible via the ELGA online portal are currently saved in form of a chronological list. This list does not include a search function and users need to click on each file individually in order to get an insight into information. Given that some patients may accumulate a large number of records over a longer time period, it is easy to lose track of information. The same applies to physicians and other health care professionals, who aim to make use of a patient's health data. As the body content of the documents is mostly in PDF format, a patient summary or a track mode to monitor the developments of specific health parameters have not been implemented and there is a need to improve the usability of the record system for both physicians and patients. For instance, a patient summary would allow for a quick and concise assessment of the latest treatment status of patients, setting free more time during a doctor visits to e.g. clarify questions. Furthermore, a tracking system with a search function to monitor the development of specific parameters, such as blood pressure, may enhance patient treatment, as it provides for a more thorough overview of a patient's health status and needs. Alternatively, this task could be outsourced to the private sector.

The current challenges in monitoring and evaluating the development of treatment are also found in the e-medication application. Prescriptions are listed one by one and users need to click on individual files in order to open these. Therefore, a combined list of medications with the options to search for or track specific medications could provide for an improved overview to both patients and physicians. It must be noted however, that e-medication information is only stored for a maximum of 12 months, which would

make it difficult to track long-term treatments and changes in dosage for e.g. chronically ill. Therefore an extension of information storage may be considered in the case of an introduction of a tracking mode.

Expansion of data collection

The present electronic patient record in Austria includes information on discharge letters by approved healthcare professionals, as well as laboratory and radiology diagnoses. Additional information approved for inclusion constitutes the living will of a patient, health care proxies and legal medical registers. As such, the database allows for an overview of the patient's medical history, however, does not provide further information on health behaviours, such as smoking, or family medical history, despite their relevance to treatment paths and prescribing. A more extensive patient record could further improve patient-centred care, provided an insured person has expressed interest in the service. For instance, physicians could gauge patients' interest in the sharing of information that is collected during the yearly preventive check-up, which could enable a more extensive monitoring of a patient's medical history and health behaviours and as such offer suggestions on interventions that are better tailored to the individual.

Immediate sharing of information on health care use

Following a statutory mandate, statutory insurance carriers are obliged to annually inform their insured members about the individual's use of healthcare services since 2004. Since 2013, individuals only receive the annual letter upon an explicit request. Furthermore, an annual overview may not inform patients in times of actual information need. Therefore, providing information on health care costs in addition to the utilisation of services through ELGA's online portal could enable year-round access to necessary information for patients and prevent billing errors, provided this service has been requested by the patient.

Dissemination of information on ELGA to health care providers

For the moment, health care providers receive information brochures on ELGA, which, to the inconvenience of health care providers, may not always clearly and effectively provide information on the use of ELGA. An option would be to develop ELGA showcases that could be presented to health care providers, such as pharmacies, to facilitate and support the roll out of ELGA across as many health care providers as possible.

Summary of policy options

The ELGA project, including its application on e-medication, is one of the largest harmonisation processes in the health care system to standardise the infrastructure and regulations pertaining to health data. Through facilitating the communication between patients and providers, the system supports the quality and efficiency of health care provision, whilst preventing duplication of care. In addition, the e-medication app, which is based on a large database of inpatient and outpatient drugs (including herbal medicine), allows for the recording of pharmaceuticals to prevent contraindications and duplicate prescriptions. Therefore, the step-by-step implementation of ELGA constitutes a positive development, and one that is important from a European perspective, as many countries continue to face obstacles to the introduction and expansion of e-health.

However, challenges to ELGA's full implementation remain, including the continued widespread use of PDF-based body contents as opposed to a full XML format, the complete integration of ELGA applications into physician practice-based software, and the different diagnosis codification systems across different levels of care.

Against this background, a number of policy options were outlined in this section. For instance, synergy potentials should be identified between data storage sites, in order to make better use of current capacity potentials and to prevent the costly establishment of new sites. Furthermore, applications that facilitate the treatment process and overview for patients should be further expanded and developed, including an automated electronic prescribing system with an integrated recall system for medical adherence, e-scheduling, e-vaccination and e-mother-child-passport. In addition, the implementation of a more user-friendly patient summary, as is currently in development, is highly supported, as well as the expansion of digital image storage. A standardisation of the diagnosis classification system could further improve interoperability.

In attempt to make further use of the system, additional patient data on, for example, health behaviours could be collected, while simultaneously the option to monitor and evaluate the development of specific health parameters for both patients and physicians could be introduced. Another possibility is to upload information on health care use immediately, rather than sending out a yearly letter to the insured. Regardless of which options are introduced, easily comprehensible information on ELGA and its applications to health care providers should be further disseminated, such as in the form of showcases, to further promote the expansion of the system.

Legal considerations

No particular constitutional impediments have to be faced with respect to these options, apart from data protection issues that have to be considered. Certain legal amendments as well as amendments to the current system of contractual agreements would be required, which might cause political impediments.

6.7 Pharmaceutical expenditure and procurement

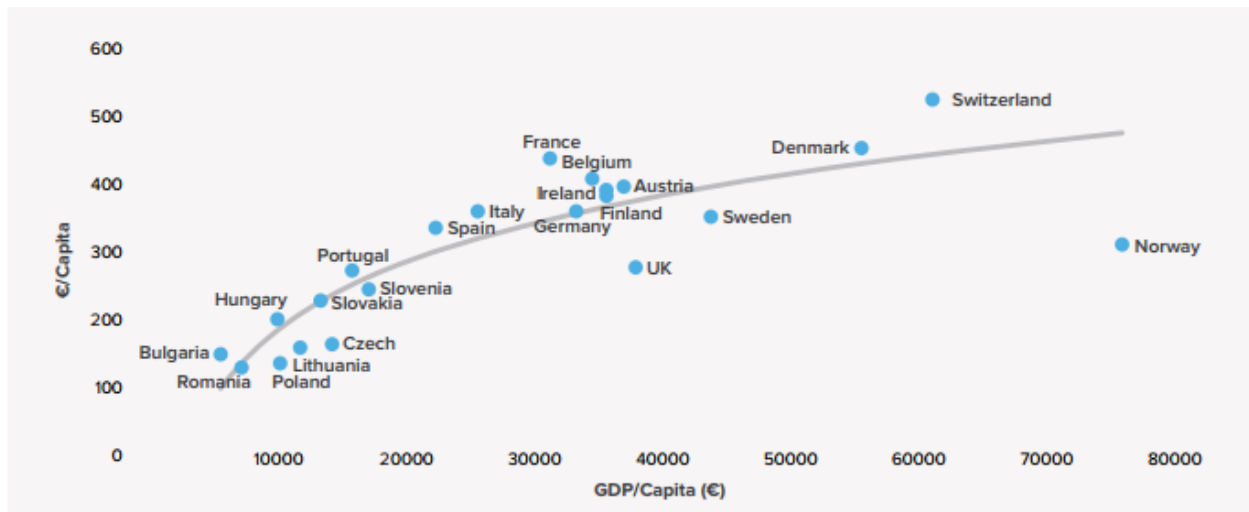
6.7.1 Pharmaceutical expenditure

Austria faces a situation that is increasingly common among the world's developed countries: rising healthcare costs, and related concerns over health system sustainability and affordability.

Total spending on pharmaceuticals, in particular, remains lower than in other OECD countries (415). In 2014 (latest available year), total drug sales in Austria equalled US\$403.8 per capita (PPP-adjusted); this was lower than in 16 other OECD countries (416). Per capita pharmaceutical spending, however, is comparable to other major developed countries, including Germany, Finland, Ireland, Belgium, and France (see figure below).

While generic drug penetration is high in Austria—accounting for a large and growing volume of the reimbursed pharmaceutical market—the available evidence suggests that branded medicine prices in Austria are high compared with many other advanced economies. We conclude by providing policy recommendations to help address this issue.

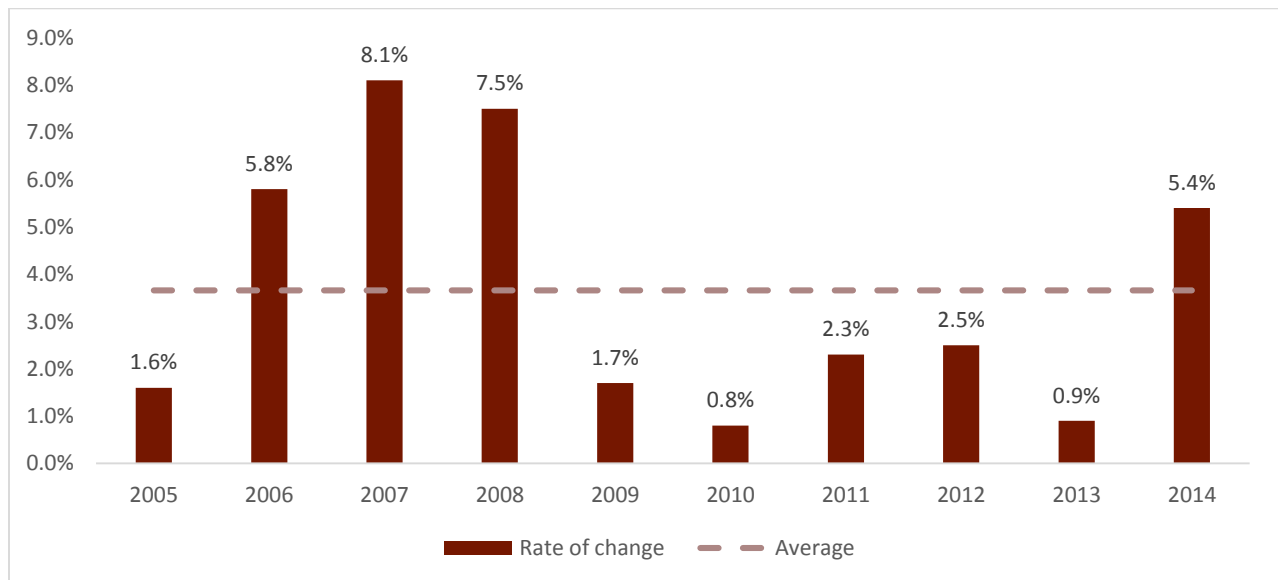
Figure 139: Relationship between GDP per capita and per capita pharmaceutical expenditure



Source: Taken directly from (417)

Austria is experiencing a high rate of growth in pharmaceutical spending per capita. Among the OECD countries for which data exists, Austria ranks sixth highest in the compounded annual rate of growth (CAGR) in spending on medicines, with a 3.3% CAGR between 2010 and 2014. Notably, pharmaceutical spending appears to have accelerated over recent years: while increases in spending on medicinal products by insurance carriers increased by between 0.8% - 2.5% on an annual basis between 2010 and 2012, expenditures increased by 5.4% in 2014 compared with 0.9% in 2013 (Figure 140) (418).

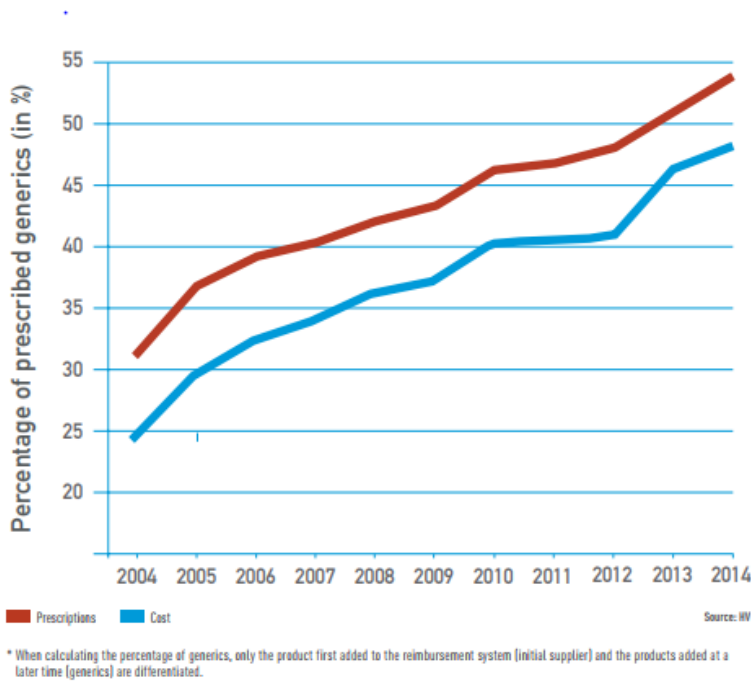
Figure 140: Change rates for expenditures for medicinal products



Source: (419)

High rates of growth in pharmaceutical spending are occurring even as the share of generics in Austria's market continues to grow. According to a recent report, 52% of the volume, and 47% of the value, of the reimbursement market is associated with generic medicines (418). Both figures have also risen steadily over time, suggesting proportionally greater use of, and expenditure on, generic medicines (see figure below).

Figure 141: Prescribed generic products in the reimbursement market



Source: Taken directly from (419)

That a growing share of the value of the reimbursable market belongs to generics could owe to growing prices or volumes of this class of medicines. A range of evidence suggests that the latter is the predominant factor contributing to long-term pharmaceutical market value trends. First, while considerable price reductions have been observed in Austria between 2005 and 2014, these have been lower than those observed in other major countries. Austria has, over the same period, witnessed a notable rise in the volume utilisation on medicines, though a smaller increase than that observed in several other European countries (Figure 142).

Figure 142: Prescribed generic products in the reimbursement market

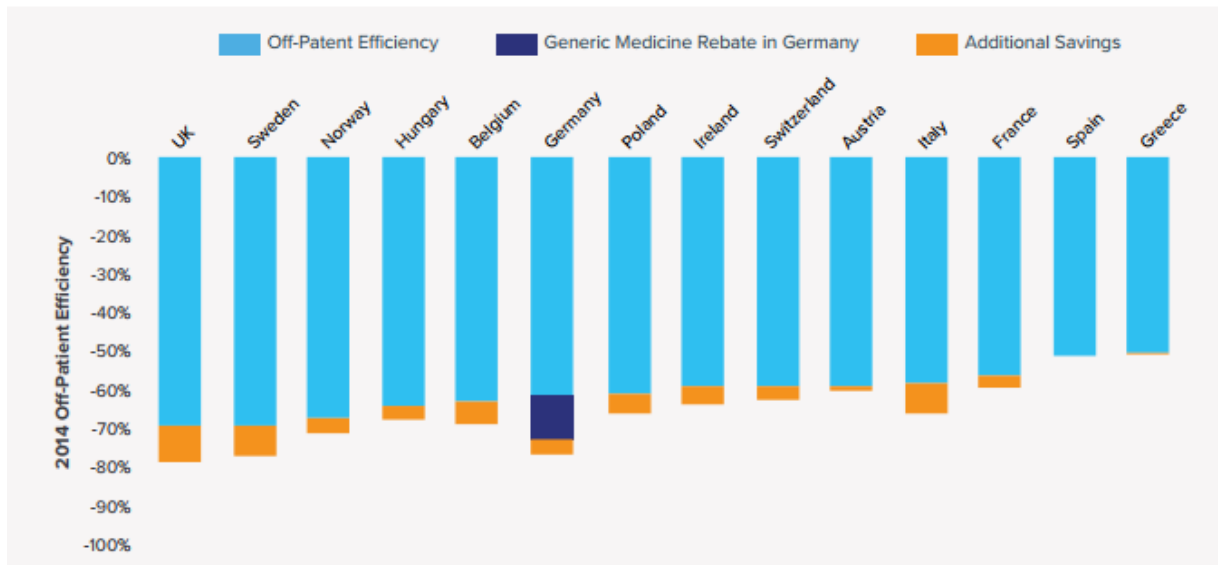
Country	(€/TD)	Volume (TD/cap)	Treatment cost	IMPACT
Germany	-62%	153%	-7%	Impact of price decline > volume increase
UK	-64%	143%	-13%	
France	-51%	40%	-31%	Decline in overall treatment cost
Italy	-53%	121%	-9%	

Country	(€/TD)	Volume (TD/cap)	Treatment cost	IMPACT
Ireland	-59%	148%	-9%	
Sweden	-69%	108%	-40%	
Spain	-50%	109%	0%	Impact of price decline equal to volume increase
Czech	-53%	132%	2%	
Austria	-49%	133%	14%	Stabilisation of overall treatment cost
Slovenia	-69%	152%	-30%	Increased access in under-served markets
Poland	-51%	192%	33%	
Slovakia	-63%	207%	9%	

Source: (417)

Moreover, generics are slowly obtaining a larger share of the volume of the reimbursable drug market (419). Prices for medicines already on the market in Austria have decreased annually since 1996, even as the broader consumer price index has consistently trended upwards (418). Generics are also priced 66% lower in Austria than the prices of originator medicines prior to generic entry (420). There is evidence to suggest that this compares favourably with other countries in the region. In Finland, for instance, generics are priced 59% lower than the prices of originator medicines prior to generic entry, even though generic entry is higher in Finland than in Austria (266). These findings have led some to argue that the Austrian pricing system appears to be relatively ‘more efficient [in lowering] prices’ (420). Although Austria performs well in extracting savings from generic medicine competition, off-patent efficiency in the generics drug market could be further improved when evaluated against a broader set of reference countries.

Figure 143: Savings from generic medicine competition by country



Source: Taken directly from (417).

The Austrian experience in managing branded pharmaceutical spend is markedly different. Since the volume share of the reimbursable drug market in Austria associated with generics is high and continues to grow, rapid increases in total pharmaceutical spending appear driven in part by increases in the price of new—branded, and increasingly specialty—medicines.

Indeed, a recent price survey of 60 high-cost medicines in EU Member States found that:

‘For 80 percent of all 60 surveyed medicines Austrian ex-factory prices were above the EU median. For all 15 medicines of the survey that were attributable to the in-patient sector, ex-factory prices were above the EU median. Thus, Austrian ex-factory prices of the surveyed medicines ranged among the highest prices in EU context’ (421).

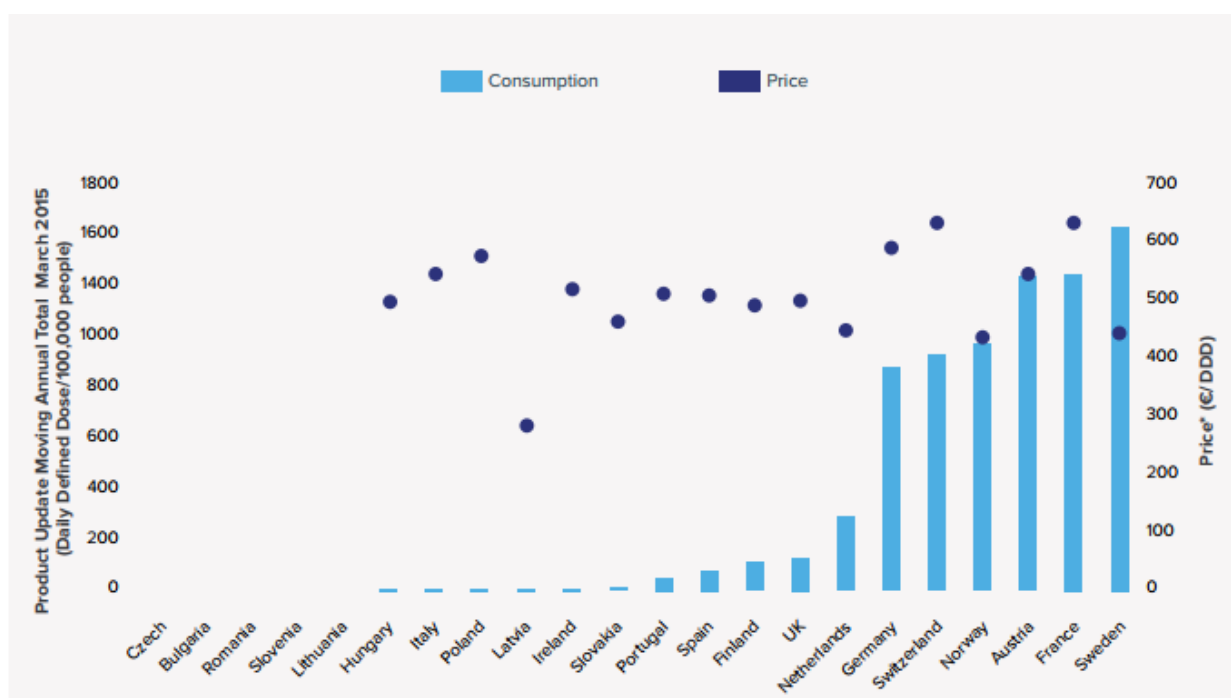
Vogler and colleagues (2016) suggest that, in comparison to other European countries, the prices of medicines that are used in-hospital—typically specialty medicines—are relatively higher than those given in outpatient settings (421). For example, given hospitals purchase directly from manufacturers and receive significant discounts (422).

Research is needed to evaluate the impact on originator pricing from generic drug entry in Austria. Branded, off-patent originators must cut their price by 30% once a generic alternative becomes available for reimbursement in Austria. This stipulation for statutory price cuts however requires that at least one generic alternative enter the market, and is therefore not directly tied to patent expiration. This policy

context may incentivise behaviours on the part of branded pharmaceutical manufacturers that are designed to restrict or delay generic drug entry (423). It remains unclear whether branded drug manufacturers adopt similar strategies in Austria, and how this effects generic drug entry and originator drug pricing.

Despite relatively high drug prices in the branded drug market, there is evidence to suggest that patient access remains strong, at least for certain medicines. With respect to Sovaldi (Hepatitis C drug), IMS Health recently found that Austria had the fifth highest price for the medicine across 22 European countries, but also had the third highest amount of defined daily doses administered per 100,000 people (Figure 144).

Figure 144: Solvaldi uptake and price, by country



Source: Taken directly from (417).

6.7.2 Procurement of pharmaceuticals: Tendering

In light of rising pharmaceutical prices, governments and health care providers are increasingly concerned with ensuring access to and affordability of medicines. To achieve the goal of access and affordability, drug prices should reflect not only production costs but also their added social value (424). Value assessments of existing and new pharmaceuticals through, for example, health technology assessment (HTA), price negotiations and tendering have been used as tools to achieve affordable prices (425).

The procurement process of pharmaceuticals is organised differently across Europe, which results in disparities in access to medicines (426). Efficient and transparent management of procurement is key to ensuring cost-effective drugs are selected at the right quantities, needs are adequately quantified and product quality is high (427). Tendering, which serves as a key mechanism during the procurement process, serves as a mechanism to stimulate competition and drive prices down to marginal costs of production (428). The success of tendering processes is, however, sensitive to a variety of factors, therefore, evidence of its impact on prices is not concrete (429).

This section introduces the concept of tendering and presents empirical evidence on its implementation across Europe. It highlights benefits of tendering, key legal and practical challenges and provides an outlook of tendering for the future. Country examples have been from six European countries, Norway, France, Germany, the United Kingdom (UK), Belgium and the Netherlands.

Objectives of tendering

Tendering refers to a concept whereby a payer (e.g. hospital association, insurance) purchases pharmaceuticals on the basis of a tendering procedure, with the contract being offered to the manufacturer(s) offering the best bid (430). Tendering can be used in both primary and hospital care, however, it is more common in the latter (430).

Tendering is used as a strategy for the reimbursement of pharmaceuticals as part of a country's social security system. Pharmaceutical reimbursement assumes the existence of a third-party payer at national, regional or local level who decides which medicines to cover at what price and at what co-payments, taking various factors into account (431). Public procurement of pharmaceuticals is pursued by different contracting entities across Europe varying from governments, hospitals, and public insurance funds, for example (432).

In a tendering process, contracting entities purchase drugs from the manufacturer with the best bid, which includes criteria such as price, quality, reliability, and ability to service the market (433). Nevertheless, the best or lowest price is usually considered the key criterion. The manufacturer, or in certain cases (e.g. Germany), manufacturers, who wins the bid is then awarded the right to service the relevant market for a specific period of time (434).

Tendering is based on the economic theory that a firm sets its bid subject to its reservation price, the minimum price it is willing to accept for a product, which is likely to be close to marginal costs where the firm makes zero economic profit. Tendering thereby encourages close to competitive prices in the absence

of perfect information on firms' production functions (433). However, it is important to distinguish the impact tendering has on prices for generics and on-patent drugs. Specifically, tendering is more likely to achieve its intended effect (i.e. significantly reduced prices) within the generic market, given the presence of multiple manufacturers all offering an identical molecule. In regard to on-patent medicines or those with market exclusivity, however, competition will be minimal if there is little scope for product substitution.

In Europe, tendering is organised separately across countries (435). The European Union legally regulates public procurement to ensure transparency and fairness in the tendering process and to promote European cooperation in this regard. In 2014, the European Union implemented a new legal directive for procurement, the Directive on Procurement (2014/24/EU), which is mandatory for European Union member states to adopt into their legal system (436). A common legal framework within the EU aims to improve efficiency through cross-border cooperation, for example, through joint procurement (425).

Benefits associated with tendering

Tendering aims to reduce pharmaceutical expenditures in face of fiscal constraints by introducing competition (429). Evidence from Germany and the Netherlands shows that in the short-run, tendering significantly decreases the price of generics leading to savings for national health insurers (437).

Tendering processes foster competition among suppliers thereby reducing prices to a level close or equal to marginal costs (428). If the tendering process is managed well, it can succeed in driving down prices sustainably without harming suppliers. Payers therefore gain power over the procurement process, which may limit price distortions caused by a concentration of suppliers in the market (428).

To ensure efficient and transparent management of the tendering process it is, however, key to identify the 'Most Economically Advantageous Tenders' (MEATs) (436). This entails choosing cost-effective drugs, quantifying patient needs, monitoring procurement processes and drug quality (427). When making tendering decisions, it is essential to consider the patients' interests and needs and not just prices. MEAT is part of the European legislative Directive on Procurement that states that both costs and quality need to determine procurement decisions (432). When MEATs are successfully identified, tendering has the potential of reducing costs without decreasing quality of products. The scope of this benefit depends, however, on the implementation of tenders (424). The organisation of tendering at a European Union level is of particular interest to smaller member states that otherwise lack bargaining power in the

tendering process but can gain substantial control over the procurement process and access to drugs through international cooperation (425).

Challenges associated with tendering

Despite the potential benefits from tendering, the success of public procurement strategies in reducing costs without harming stakeholders depends on a variety of factors. One key criticism of tendering is that even though it may increase competition in the short-run, by forcing pharmaceutical firms to enclose their bids, competition in the long-run may be minimised. Specifically, awarding a tender to one or a small number of manufacturers creates market power, which in long-run, may drive other manufacturers out of the market thus increasing supplier concentration (438). For example, Germany has seen a substantial increase in market concentration of its top ten suppliers, which increases the risk of an 'oligopolisation of the generics market' in the long-run (439). The fact that only one or a small number of suppliers remains in the market carries an additional risk of supply shortages (428). As was the case in the Netherlands, where substantial gaps occurred, specifically, 3-4% of preferred drugs were not readily available (440). This effect depends partly on the length of the tender, where longer tender periods reduce the likelihood of other suppliers producing the product. This effect might hurt particularly smaller producers that leave the market as a consequence of not being competitive (438).

Price competition may also lead to a reduction in quality of the products if quality assurance is not monitored effectively (428). The rapid decrease in prices from tendering processes may lead to a shift in strategy for pharmaceutical firms. They may start specialising in areas with low price elasticities and smaller market segments. Tendering hence also reduces innovation incentives for preferred drugs (441). Such general equilibrium effects may lead to the adverse effect of tendering of reduced supply of the preferred drug and increased prices in the long-run.

Tendering processes strongly depend on regulation and legal frameworks, the implementation of which is key for its sustainable success (428). If the selection of products in the tendering process is not organised transparently and fairly and if there is discrimination among products in the selection process, this may reduce competition in procurement and lead to higher prices (442). Winning prices in the tendering process are not publicly disclosed. This lack of transparency in the tendering process is particularly critical in the European context and resembles a Prisoner's Dilemma (425). Information asymmetries regarding prices between European countries makes countries reluctant to collaborate in procurement processes fearing that they would lose out on individually agreed discounts even though joint procurement may lead to lower prices overall given the increased bargaining power of countries from cooperation.

Outlook for tendering

At times of rising health expenditures and fiscal strains, tendering has the potential to lower prices for both inpatient and outpatient medicine. From the perspective of public policymakers, it is essential to weigh both public and patients' interests by ensuring access, affordability and quality of drugs (436). Incentivising innovation is another key rationale that needs to be promoted alongside price-reducing efforts. To achieve a sufficient level of innovation, research-based pharmaceutical companies should be considered in the procurement decision.

It is essential to address the multiplicity of interests of various stakeholders in the procurement process. Tendering seems an attractive option for health insurances as it decreases costs substantially. Manufacturers may, however, be disincentivised to produce generic medicines and innovate in areas that are particularly affected by tendering (428). Doctors and pharmacists are also key to the success of tendering. For example, tendering can impact patient-doctor relationships by forcing doctors to prescribe reimbursable medicines, which may not be the patient's preference (437). The potential impact of tendering is subject to each country's regulation, thus policies in this area must take potential negative implications into account (443).

Increasingly countries across Europe are turning to joint procurement, in particular, for medical countermeasures and orphan drugs. The European Directive on Procurement provides the framework for increasing joint procurement efforts. Joint procurement has the benefit of knowledge sharing, increasing bargaining power, preventing short-term supply gaps, and aiding price transparency. Joint procurement is particularly beneficial for small countries, who are responsible for servicing a relatively low number of people (425). Cooperation does, however, require effective communication, trust and commitment between member states, which can be supported by a well-designed legal framework for tendering (435).

6.7.3 International case studies: Procurement of medicines

Netherlands

In response to comparatively high generic prices, five health insurers in the Netherlands adopted tendering in 2005 as part of the Dutch Preference Pricing Policy. Tendering has since expanded significantly across the country.

Tendering criteria in the Netherlands are primarily based on combination of low prices and the best offer. Pharmacists can enter into negotiations with insurers, which involves categories such as quality, medical

and therapeutic benefits and needs and further qualitative factors such as storage, supply conditions, payment terms and frequency of delivery (424).

Medicines are clustered according to active ingredient, dosage form and strength, and tenders are chosen accordingly (434). In general, one company can win the tender and receive an exclusive contract for three to six months with the tender issuing company (444). Evidence on tendering shows that competition increased resulting from the implementation of tendering and that prices of widely used generics collapsed. Prices in the Netherlands decreased by up to 92% compared to pre-preference policy prices (445). This decrease generated savings of €355 million in 2008 and an average price concession of approximately 85% of the retail price before tendering (437). There is no evidence that the market is more concentrated in response to tendering mechanisms due to e.g. withdrawal from the markets by firms. This may, however, be confounded by mergers in the pharmaceutical industry the Netherlands.

Challenges facing tendering in the Netherlands include supply gaps, which was a result of inadequate timing between the announcement of winners and the implementation of the tender. For example, the drug supplier for pravastatin and simvastatin was unable to adequately supply the Dutch market for four weeks (428). Addressing supply shortages within pharmacies resulted in costs of approximately €60 million per year and strong opposition to tendering, particularly by pharmacists (440).

Key stakeholders involved in the tendering process are manufacturers, health insurers, pharmacists and patients. As a result of tendering, health insurers have managed to increase their bargaining power, which has led to lower prices and expenditures. Pharmacists, on the other hand, oppose tendering given they have experienced reduced incomes, high transaction costs from complying with preference of nine different insurers, supply gaps and stocking issues.

Given the impact of tendering on price reductions, the outlook for tendering in the Netherlands is strong. Specifically, fierce price competition, resulting from tendering, is likely to lead to additional saving for pharmaceutical expenditures. However, the success of tendering may be limited if supply gaps continue (440).

Finally, the effect of tendering on key stakeholders needs to be considered, in particular the remuneration model for pharmacists. One option would be to link remuneration of pharmacists to the number of packs sold and on the services provided, which is how it is organised in Germany (440).

Germany

Germany implemented tendering in 2004 under ‘Rabattverträge’ which is characterised by fast uptake and implementation (446). Procured pharmaceuticals primarily include those in the ambulatory care, and are mainly comprised of generics. Through tendering, the contracting authority (sickness funds), have been able to increase their bargaining power (437).

The German tendering system relies on several criteria include quality, medical and therapeutic needs, and prices to determine the most economically advantageous tender (MEAT). MEAT does not presume only one winner, rather up to three manufacturers can supply the market for a certain drug (428). On average, the MEAT tender has the right to supply the market for approximately two years.

Tendering was first implemented to lower drug prices that were not included in reimbursement schemes (429). Pharmaceutical prices in Germany are not published publicly, however, price reductions as a result of tendering are likely to be around 90% of the patent expiry prices and close to marginal costs. For example, in 2007, rebate contracts led to a saving of €310 million to insurers, which is equivalent to 1.1% of total expenditures on drugs in Germany (193). Tendering, however, has also led to market concentration, with a smaller number of manufacturers supplying the market. Specifically, concentration of the top ten German seller increased from 91.4 % in 2009 to 93.7% in 2010 to 97% until 2013 (428). A reduction in the number of manufacturers, in the long-run, may led to price increases, however, evidence of this has not yet been determined (439).

Since 2007, pharmacists are obliged to prescribe the rebate drug unless the doctor specifically opposes. This right of doctors to write ‘do not substitute’ on prescriptions potentially restricts the success of tendering, particularly if patients are reluctant to switch medication (447). Shortages also occurred in the German market due to logistic mismanagement (448).

The main challenge of tendering in Germany is the increased seller concentration and its potential impact on long-term prices. The fact that the German insurance market is dominated by one single provider, the AOK, which make up 41% of the total insurance market, further exacerbates market concentration. The AOK can determine stocking decisions and the concentration of supplier in the market (429). Other than market concentration, tendering also increases administrative costs for dealing with rebate contracts, which potentially offset the savings gain from tendering (439). These administrative costs resulted from legal challenges and litigation cases that also increased administrative costs for pharmaceutical companies (439).

Since drug prices of successful tenderers are only made available to sickness funds, the German pharmaceutical market lacks transparency, which is legally contentious (428). The fact that individual sickness funds operate at a regional level and negotiate rebate contracts individually with pharmaceutical companies exacerbates transparency issues (447). An additional challenge to tendering in the German market is the fact that sickness funds have the right to provide a tender to three providers. The three preferred providers often differ in their sales force. This is often perceived as unfair competition and induces uncertainty to manufacturers about market uptake and penetration (428).

The impact of tendering on patient outcomes in Germany seems to be moderate. Seven per cent of patients and 11% of older patients reported problems (e.g. tolerance) with having to switch to alternative medicines in a survey of 2,500 individuals (428). General practitioners report, however, that in 87.4% of all cases, patients experienced compliance issues when having switch products (428). This indicates that there may be information asymmetries between doctors and patients that prevent patients from switching drugs successfully.

The key stakeholders in the German tendering process are sickness funds who are interested in maximising savings and the AOK as the main tendering body. Manufacturers are guaranteed a market when they win a tender, however, this win is subject to uncertainty given up to three pharmaceutical companies can supply the market. Manufacturers who are excluded from the tender may exit the market or shift manufacturing outside of Europe given the long tender periods in Germany. Pharmacists did not oppose to rebate contracts but still experienced stocking issues particularly with preferred drugs by AOK that needed to be stocked in large amounts. Patients did not oppose preferred drugs since other drugs included more co-payments and preferred drugs were discounted.

The outlook of tendering in Germany potentially involves further cost savings. The increase market concentration can lead to a restructuring of the manufacturing market where manufacturers redirect their research efforts to niche areas and stop producing preferred drugs. Manufacturers potentially also shift their production to products, which are irreplaceable by generics. About 80% of all drugs are sold as 'aut idem' meaning a doctor can replace prescriptions with another identical active agent. General equilibrium effects may be problematic in the German market where in the long-run prices increase and supply decreases as supplier start focusing on areas with lower price elasticities (438). Such adverse incentives would be contrary to the initial rationale of tendering to decrease pharmaceutical expenditure and increase access to preferred drugs.

Belgium

Tendering in Belgium was introduced in 2008 for pharmaceuticals in ambulatory care and hospital care. The focus of tendering was first on Simvastatin and hospital care including vaccines, specific therapeutic groups of pharmaceuticals, and pharmaceuticals for military and prisoner population. The main contracting authorities in Belgium are health insurers, pharmacists associations, and trade unions (449).

Belgium issues tenders at a national level and is hence transparent (447). The criteria for tenders include prices but also further qualitative factors such as storage, supply conditions, payment terms, frequency of delivery and packaging. The winner of a tender receives a preferential reimbursement rate of 75% while other versions of the same drug received just 50% (449). Tendering for Simvastatin was implemented in 2007-08, which led to €15 million reduction in costs due to direct savings on Simvastatin, and to a lesser extent, indirect increase in spending. In response to the Simvastatin tender, physicians changed their prescription behaviour and switched prescriptions from Simvastatin to other medicines with a similar therapeutic indication that were not subject to the tendering procedure (447). This adverse shift in demand increased total expenditures on statins by 6.5% thereby offsetting the savings from the Simvastatin tender (448). Belgium experienced further legal issues with manufacturers since the regulation concern successful tenderer was initially unclear. Overall, tendering has been unpopular in Belgium since both generics and originator markets feared severe losses.

The key challenge of tendering in Belgium was the reallocation of demand from Simvastatin to drugs of equal therapeutic indication and resulting cost increases (447). The overall budget impact of tendering in Belgium is ambiguous since marketing efforts were directed at high-cost alternatives of tender winners and prescribing patterns changed (449). The Belgian case of Simvastatin illustrates the potential adverse effects of tendering mechanisms if they are not implemented in a well-established framework. Legal challenges and changes in demand can offset savings from tendering entirely (424). Belgium withdrew its tendering policy for off-patent medicines due to its negative experiences in the Simvastatin case (424).

*France*⁹⁹

Drugs which are subject to market authorisation from the European Medicine Agency are subject to the following processes. First, They are assessed by the French National Authority for Health (Haute Autorité de santé, HAS), which provides advice to the Government on: a) whether the drug should be included in

⁹⁹ Information sources directly from D. Polton (2017).

the benefit basket and the level of reimbursement; and b) the added value of the drug, that is, the drug's progress relative to existing treatments (with a score ranging from I (major improvement) to V (no improvement)). An economic evaluation (cost-effectiveness) is also performed for drugs claiming a high added value (I, II or III) and having a financial impact above a threshold. France is unique in that both the assessment and the appraisal are performed by the HAS and are scientifically driven.

Second, the added value is used in the negotiation of the price by the Economic Committee on health products, that is, the Pricing Committee. The committee is inter-ministerial, with members from the Ministry of Health, the Ministry of Economy, in addition to representatives from social health insurance and voluntary health insurance. Thus, the committee reflects different views about what should be a relevant price. Bargaining takes place in the framework of a four-year collective contract between the Committee and the organisation representative of the industry. One of the provisions of the current contract is that an added value of I, II or III leads to external reference pricing (specifically, using Germany, England, Italy, Spain). Besides the list price, the Committee negotiates managed-entry agreements (MEAs), which are essentially confidential rebates.

Third, once an agreement has been reached between the Committee and the manufacturer, the Ministry of Health takes the decision to include the drug in the benefit basket with the list price set by the Committee.

There may be an additional step if the drug which is being dispensed in inpatient care is very costly. Specially, under normal circumstances, the cost of a drug in inpatient care is included in the DRG system, that is, the lump sum payment by social health insurers to hospitals. However, for very expensive drugs, an additional payment is made on top of the DRG. Until recently these high cost drugs were appraised by a specific committee. Given the rapid growth of these expenditures, stricter rules have been issued in the recent years (i.e. only drugs with an added value of I, II or III, or drugs with a comparator which is already paid separately, can be on the list). This means that for a drug which has a modest improvement (IV) in comparison with a drug financed within the payment per case, the hospital will not receive extra money if the drug is prescribed.

United Kingdom

Tendering for hospital care in the UK has focused on the MEAT (most economically advantageous tenderer) approach since the 1950s, for both branded and generic drugs. MEAT includes considerations

of prices, quality, and medical and therapeutic needs. Low prices are, however, weighed more heavily in the tender decisions than other drug criteria in the UK.

Procured pharmaceuticals include vaccines, pharmaceuticals against communicable diseases and pandemics amongst others. The contracting authority for tendering in the UK is the NHS. The healthcare system and the tendering system is very homogeneous in the UK due to the NHS, which can use its contracting authority for collective purchasing. Traditionally, tendering was mostly used for hospital medicines at end of patent life, but today is also used for general medicines earlier in the patent period (432). Tendering procedures have led to cost cuts of around one third in 10 years without reduced access to medicines in specific pharmaceutical areas (436). An example of such cost cuts are replacement blood treatments for bleeding disorders that were facilitated by increased technologies.

A key challenge for UK tendering mechanisms in the UK is to ensure that it adopts the 2014 European Public Procurement Directive and complies with international cooperation in tendering, despite Brexit (436). To incentivise innovation, it is essential that tendering criteria are not only based on lowest prices but also entail quality measurements as indicated in the MEAT approach. Centralisation in tendering is increasingly important in the UK system, which can result in cost savings and improved transparency.

Norway

Tendering in Norway is focused on hospital care. Procured pharmaceuticals mainly include pharmaceuticals defined in pandemic plans. The contracting authority is the National Procurement Agency that procures all medicines at a centralised level (450).

The Norwegian Drug Procurement Cooperation LIS procures for all publicly funded hospitals on a yearly basis. Tender criteria include criteria such as lowest price and best economic offer based on qualitative factors such as storage, supply conditions, payment terms, frequency of deliver and packaging (450).

Tenders are given to one winner. The public tender process involves a cross-functional group with representatives from procurement agencies, clinicians and technical staff (451). The fact that pharmaceutical procurement is highly centralised in Norway increases buyer power and attracts new entrants into the market. Centralisation enables competition and circumvents problems of transparency when procurement is organised regionally. Centralisation by the LIS further enables cost savings since purchase and delivery agreements of pharmaceuticals are prepared jointly with state-owned hospitals (452).

LIS tenders led to a price reduction of 28% on average for Norwegian hospitals compared to statutory maximum prices. Cooperation contributes to more efficient and better use of the medicines in hospitals (453). The efficiency of LIS enables Norway to achieve lower prices compared to other European countries due to centralised tendering. Centralisation achieves more power for national procurement agency and Norway additionally implemented new tendering procedures (424).

6.7.4 Procurement of medicines in Austria

Overview

Austria's pharmaceutical system is characterised by the interplay of several actors. The Ministry of Health and Women's Affairs is responsible for reimbursement and pricing decisions within the country. The advisory councils and commissions in the pharmaceutical sector are also based at the BMGF. Figure 149 outlines the pharmaceutical system in Austria, which covers both the inpatient and outpatient sector (please note, this diagram has been taken directly from GÖG).

Authorisation and classification (all drugs)

The Austrian Federal Office for Safety in Health Care (Bundesamt für Sicherheit im Gesundheitswesen, BASG) is subordinate to the BMGF and is in charge of granting market authorisation for drugs, as well as classifying pharmaceuticals according to their prescription status. BASG sits within the Austrian Agency for Health and Food Safety (Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH, AGES). Specifically, within AGES Medizinmarktaufsicht (Austrian Medicines and Medical Devices Agency), which is a subdivision responsible for the pharmaceutical agenda. A number of criteria are used to assess whether a drug is authorised or not, namely quality, safety, efficacy (as outlined within the Directive 2004/27/EC) and the Austrian Medicines Act.

AGES, in consultation with the Prescription Committee and the Restriction Committee (located within BMFG), has ultimate responsibility for decisions regarding prescription, dispensing requirements, whether a medicine fulfills the appropriate criteria, as well as pharmacovigilance (i.e. detection, assessment, understanding and prevention of adverse drug effects) (454).

Pricing at ex-factory price level (outpatient)

The BMGF, which receives assistance from the Pricing Committee, is responsible for pharmaceutical pricing activities. The Pricing Committee (see Figure 145), which receives support from the Pharma Price

Information (located at GÖG), is tasked with calculating the EU average price¹⁰⁰ for pharmaceutical products reimbursable within the outpatient sector (Erstattungskodex, EKO) (using external reference pricing). If the price of a drug is considered too high, the BMGF, according to the Price Act (Preisgesetz), has the right to introduce an official price-fixing process. If the process does not begin within six weeks, the proposed manufacturer price will be implemented. Prices of drugs, which a submission for EKO has not been made, are notified to the BMGF. In this circumstance, the BMGF does not have control over the drug's price.

Figure 145: Pricing Committee

<p>Role</p> <p>The Pricing Committee, which meets once a month, assists the BMFG in pricing medicines.</p> <p>Representatives</p> <p>The BMFG acts as the Chair of the Pricing Committee, which includes representatives from the following federal ministries: Economy, Family and Youth; Finance; Agriculture, Forestry, Environment and Water Management. Additional members includes, the Chamber of Commerce, the Chamber of Labour, and the Presidential Conference of the Chambers of Agriculture.</p> <p>Law</p> <p>Activities undertaken by the Pricing Committee are governed by the Price Act (Preisgesetz).</p>
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Source: (455)

Amendments to the ASVG in May 2017 (made available on 24th April 2017) require the Pricing Committee to determine the EU average price within six months of receiving the application for inclusion in EKO (456). The price is revised after 18 months, and again at 24 months. Despite entering into force in May 2017, changes to the ASVG have been applied to all new submissions into EKO since April 2017, with the exception of those in the 'No Box' category (i.e. where the manufacturer does not apply for inclusion within EKO) (described in subsequent section).

¹⁰⁰ The EU average price can only be calculated if the on-patent medicine is marketed in at least half of the EU member states, and in at least two member states for generics.

Pricing at ex-factory price level (inpatient)

For medicines outside the outpatient sector, manufacturers are free to set their own prices. The BMGF therefore does not have control over these prices, however, it is notified when prices changes occur or when a drug is removed from EKO (455).

Pricing at wholesale and pharmacy price level (outpatient)

With respect to the wholesale pricing, the pricing is regulated by law and characterised by regressive mark-up schemes, which applies to all medicines. There exist two different schemes; one for medicines in the green and yellow boxes (see 'Reimbursement of pharmaceuticals (outpatient)'), and one for the remaining medication (as regulated within the *Verordnung der Bundesministerin für Gesundheit und Frauen über Höchstaufschläge im Arzneimittelgroßhandel*, 2004) (457). For an overview of each scheme relating to wholesale mark-ups, please refer to Figure 146 and Figure 147, which have been taken directly from the *PPRI/Pharma Profile 2012* document authored by Zimmermann & Vogler (455).

Figure 146: Wholesale mark-up scheme for products within EKO's yellow and green boxes

Ex-factory price	Maximum mark-up as % of ex-factor price	Pharmacy purchasing price (€)
€0.00-6.06	15.5%	-
€6.07-6.22	-	€7
€6.23-12.11	12.5%	-
€12.12-12.32	-	€13.62
€12.33-53.78	10.5%	-
€53.79-54.77	-	€59.43
€54.78-181.68	8.5%	-
€181.69-184.22	-	€197.12
€184.23-339.14	7.0%	-
€339.15+	Fixed amount of €23.74	-

Source: (455)

Figure 147: Wholesale mark-up scheme for remaining medicines (i.e. not within yellow and green box)

Ex-factory price	Maximum mark-up as % of ex-factor price	Pharmacy purchasing price (€)
€0.00-6.06	17.5%	-
€6.07-6.21	-	€7.12
€6.22-12.11	14.5%	-
€12.12-12.33	-	€13.87
€12.34-53.78	12.5%	-
€53.79-54.74	-	€60.50
€54.75-181.68	10.5%	-
€181.69-184.17	-	€200.76
€184.18-339.14	9.0%	-
€339.15+	Fixed amount of €30.52	-

Source: (455)

In addition, there are two regressive mark-up schemes which apply to community pharmacies. The first concerns ‘privileged customers’, for example, social health insurance carriers, Länder, or not-for-profit hospitals. The second scheme (‘basic scheme’) applies to ‘private customers’, whereby an additional 15% mark-up is applied. Both schemes are regulated by the Arzneitaxe. As is the case for wholesale mark-ups, pharmaceutical mark-ups are staggered across different price brackets (455).

Pricing at wholesale and pharmacy price level (inpatient)

Manufacturers launching a new medicine within a hospital only, are free to set their own price. The final price paid by individual or groups of hospitals (i.e. joint purchasing body, particularly for high-cost medicines) is subject to a tender process (as previously described) (422).

Reimbursement of pharmaceuticals (outpatient)

As previously discussed, drugs wholly reimbursable by social insurance must apply for inclusion within EKO. The final decision on whether a drug is reimbursed or not is taken by the HVSV, and is based on recommendations from the Pharmaceutical Evaluation Board (Heilmittel-Evaluierungs-Kommission, HEK) (which includes representatives from social insurance). Specifically, the HVSV must make a decision on

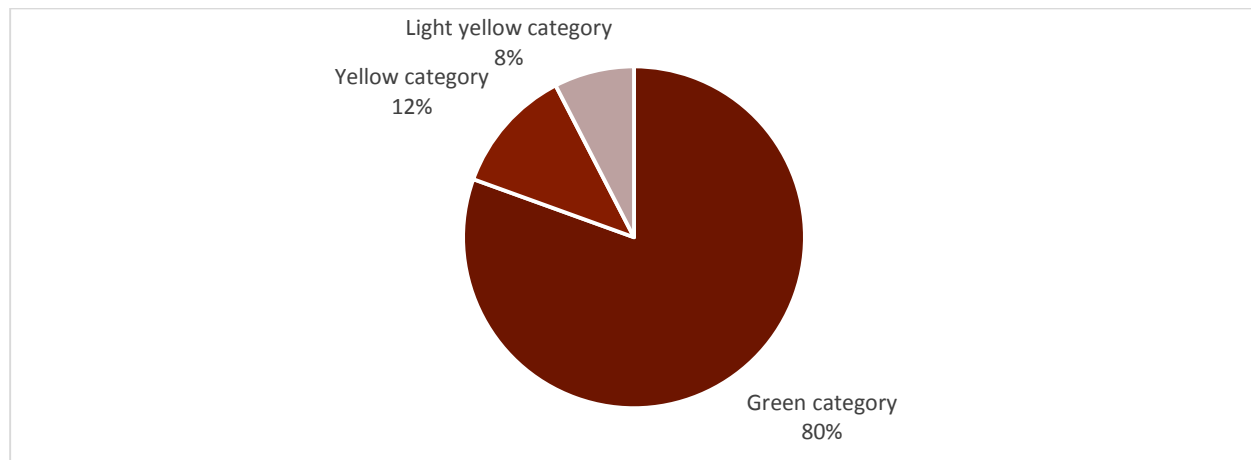
whether a drug is reimbursed within 90 days of receiving recommendations from the HEK. The HVSV is also responsible for publishing the reimbursement code (EKO) annually, with frequent updates made available online (279).

The EKO includes drugs that have been approved by the HVSV as being available and reimbursable by social health insurance carriers. Drugs within the EKO are assumed to have positive therapeutic effects on patients and can be broken down into the following groups:

- All new drugs applying for inclusion into the EKO first enter into the red box (§31 Abs. 3 Z. 12 lit. a ASVG) which are then re-distributed to either green or yellow boxes within 90 days, unless price is also considered, in which case the time period can extend up to 180 days. Insurees wishing to use drugs within the red box, must obtain prior approval from an insurance carrier's head physician. Finally, the drug will be removed from the red box if rejected by the HVSV.
 - The green box includes all medicines that qualify for automatic reimbursement and can be prescribed by any contracted physicians (80% of all drugs within EKO, as of 2015) (§31 Abs. 3 Z. 12 lit. c ASVG). Prices of medicines within the green box must fall below the EU average price.
 - The yellow box contains medicines considered to have additional therapeutic value. Unlike the green box, an ex-ante approval from the social insurance carrier's chief physician must be sought from the prescribing doctor (12% of all drugs within EKO, as of 2015) (§31 Abs. 3 Z. 12 lit. b ASVG). The maximum price of a drug in this category is the EU average price.
 - The light-yellow box includes drugs which can be freely prescribed for certain conditions, however, prescription must be accompanied by written documentation (8% of all drugs within EKO, as of 2015) (279). The maximum price of a drug in this category is the EU average price.
 - In addition to the 'boxes' outlined above, there exists a 'no box' category containing medicines manufacturers do not submit to EKO.

For medicines within EKO, patients are required to pay a fixed flat-rate fee of €5.85 per drug packet, however, certain vulnerable groups, as outlined in section 5.3, are exempt. For non-exempt groups, OOP spending on pharmaceuticals is capped at 2% of the individual's net income.

Figure 148: Breakdown of EKO codes by category (number of drugs) (n=5,002 in 2015)



Source: Data based on Lesistungbericht (2015), HVSV

In regard to ‘follower’ medicines (i.e. ‘me too’ drugs or generics) applying for subsequent inclusion in EKO, automatic price reductions are enforced. Specifically,

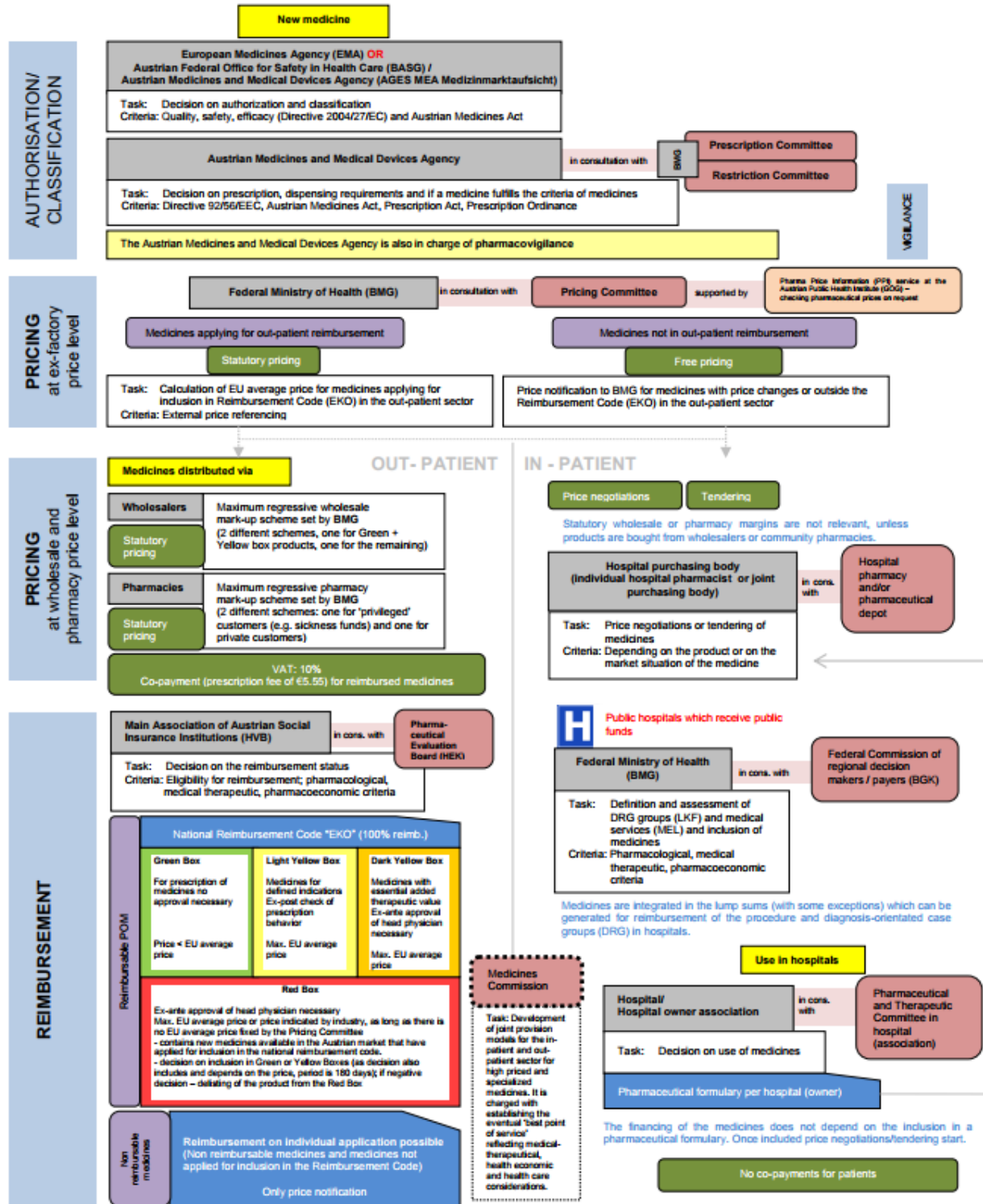
- The first follower must be priced at least 48% below the price of the original product
- The second follower must be at least 15% lower than the first follower
- The third follower must be at 10% lower than the second follower.

In addition to the above, the originator’s price must be reduced by at least 30% within three months of a generic entering the market.

Changes to EKO will be implemented from 1 January 2018. Specifically:

- The prices of medicines that did not apply for inclusion within EKO, will not be able to exceed the EU average price, given sales in the previous year were in excess of €750,000. If the drug price is found to be above the EU average price, the manufacturer will be required to pay back the difference upon request of a social health insurer within six months. If an EU average price does not exist, the manufacturer’s price will apply on a provisional basis.
- For medicines within the yellow and red boxes (which cover most on-patent drugs), price reviews will be undertaken 18 months once an initial price has been set, and every two years from then on.
- The overall price reduction of generics will increase from 60% to 65%, while for biosimilars the price reduction will reach 52.5%
- Drugs within the green box cannot be priced 30% higher than the lowest-priced equivalent at ATC level 5 (458).

Figure 149: Flowchart of Austria's inpatient and outpatient pharmaceutical sector



Note: The Medicines Commission no longer exists.

Reimbursement of pharmaceuticals (inpatient)

As outlined in section 6.2, hospitals within Austria are reimbursed via DRGs (i.e. the LKF model). Reimbursement for medicines, with the exception of oncological drugs, are integrated into DRG lump sum payments. Oncological drugs are excluded given these medicines are classified within their own diagnosis-orientated case group. Unlike the outpatient sector where a flat rate payment applies per packet, patients are not required to pay OOP for drugs (455).

No set list for the types of drugs to be offered in hospitals is provided. Rather, each individual hospital (or hospital association) is responsible for developing their own formulary (455).

International collaboration within the pharmaceutical sector

Rising healthcare costs and poor economic conditions have placed increasing strain on government budgets. Given health, including pharmaceuticals, comprise a significant component of public expenditure, there have been increasing efforts to reduce costs and stabilise spending on drugs. A popular method adopted by various European countries, including Austria, is to enhance collaboration with neighbouring countries. Such relationships can increase economies of scale thus lowering transaction costs. It also provides countries with greater leverage during negotiations, which in turn lower drug prices.

Although not considered a joint procurement initiative, in 2016, Austria entered into the BeNELuxA Agreement, along with Belgium, the Netherlands and Luxembourg (459, 460). The BeNELuxA encourages each of the aforementioned countries to collaborate across the following areas: negotiating drug prices, HTAs, horizon scanning, and exchange of information on pharmaceutical practices. The purpose of entering into this voluntary collaboration is to improve national drug security by ensuring sufficient quantity of certain drugs at a fair price (i.e. vaccines, antivirals, antitoxins) (460,461).

6.7.5 Policy options: pharmaceutical expenditure and procurement of medicines

Pharmaceutical expenditure

Several recommendations are provided to help Austrian policymakers address growing pharmaceutical expenditures. These are either academic- or policy-oriented in nature. Please also see section on HTA, which also plays a role in containing pharmaceutical expenditure.

Evidence on drivers of pharmaceutical expenditure

The existing evidence appears to suggest that growing pharmaceutical expenditures are being driven primarily by increases in the price of branded medicines. Austrian health authorities should nevertheless prioritise research efforts that are designed to further examine how different components of the Austrian pharmaceuticals market are contributing to growing pharmaceutical expenditures in the country.

Such studies should examine cost and value trends for generic and branded pharmaceutical products, utilising unit-level pricing and volume data. Since medicines used in hospitals appear to be more expensive than those delivered through outpatient settings, such studies should also evaluate the impact from the prescription setting. This may involve quantitative, pharmaceutical pricing comparisons, with stratification by type of medicine and prescription setting, as well as availability and prescribing behaviour analyses that examine both the availability of medicines, and the reasons underlying pharmaceutical prescribing behaviours.

Pharmaceutical prices are often given in terms of list prices, rather than transaction prices that are more directly relevant to payers and patients. Much of the existing academic evidence is in fact based on the former, raising questions as to how well it reflects the experience of payers and patients. To the extent that it's possible, comparative pricing studies should therefore compare pharmaceutical cost trends based on list prices, as well as transaction prices.

Policy initiatives

There is growing recognition that external reference pricing (ERP) systems may incentivise initial entry in high-price markets, and delay or prevent entry in lower-income countries. This strategy may propagate high drug prices throughout referenced markets, and is further compounded by the fact that ERP systems often reference list prices rather than transaction prices that include negotiated discounts and/or rebates.

ERP systems should therefore consider the impact overlooking confidential discounts, which are now widespread in European and North America (462).

Austria should evaluate the design of its ERP system within this context, particularly since its domestic ERP system, which operates within the outpatient sector, targets in-patent medicines that often have few if any competitors (463). If they are to be used in the in-patent drug market, ERP systems should reference from a basket of countries that encompasses low and high pricing tiers. To the degree that it may be possible, Austria should also consider moving away from the use of list prices in its ERP systems. This could be achieved by enhancing information exchanges with health insurance carriers in neighbouring countries, particularly in regard to high-cost medicines. For example, through the BeNeLuxA agreement (as previously discussed), as well as the Medicine Evaluation Committee (MEDEV) of the European Social Health Insurance Forum. A move away from an ERP system may be of particular importance, given recent initiatives to rationalise spending on non-reimbursed medicines by referencing against European average prices.

Austria should consider modifying domestic regulations on statutory prescription drug price cuts so that they are linked to patent expiration rather than generic drug entry. By doing so, Austria may prevent anticompetitive behaviours and increase efficiency in prescription drug spending.

Finally, new medicines may not always bring additional health benefits to patients (464). To increase efficiency in pharmaceutical spending, Austrian policymakers should consider the use of financial- or performance-based managed entry agreements (MEAs), particularly where there is uncertainty over the clinical benefits of new medicines. By providing a platform for developing special terms of reimbursement, these policy instruments can be used to improve therapeutic affordability, decrease any clinical uncertainty that may exist—especially if coupled with stipulations for evidence development—and, if linked with clinical activity, improve value-based health spending.

Generic policies

To enhance the role of generics in the Austrian outpatient pharmaceutical sector, several policies have been introduced. Namely, generic price links (as previously discussed), prescription monitoring by health insurance carriers, as well as educational campaigns for patients and prescribers (465). Despite these efforts, Austria is considered as a ‘second tier’ country in this regard, lagging behind countries such as the UK, the Netherlands, Germany and Denmark (466).

It is therefore recommended that Austria consider implementing additional generic policies such as INN (International nonproprietary name) prescribing (i.e. where drugs are prescribed according to their active ingredient as opposed to their brand name) and generic substitution (i.e. where prescriptions for branded drugs are automatically substituted for a generic, given one is available). Generic substitution is the primary demand-side policy to enhance the use of generics in Europe, as evidenced by the number of countries in which it is compulsory or allowed (see Table 87). The primary objective of generic substitution is to contain costs by increasing the consumption of cheaper, generic products. However, it is important to note that there exist other policies to enhance generic consumption, such as financial or non-financial incentives for prescribers. For example, the UK, which has the lowest ex-manufacturer prices for generics and one of the highest rates of generic consumption, does not employ generic substitution, choosing rather to rely on other policies such as INN prescribing (encourage, not enforced), and incentives for prescribers (physicians and pharmacists) (467,468).

Table 87: Countries who employ INN prescribing and generic substitution

Generic policy	Compulsory	Allowed
INN prescribing	<ul style="list-style-type: none"> • France • Greece • Portugal • Spain 	<ul style="list-style-type: none"> • Belgium • Germany • UK • Luxembourg
Generic substitution	<ul style="list-style-type: none"> • Germany • Sweden • Spain • Portugal • Norway • Finland 	<ul style="list-style-type: none"> • Czech Republic • Denmark • France • Hungary • Italy • Latvia • Turkey

Source: (467)

Before such policies can be introduced, appropriate structures need to be put in place. Specifically, by increasing the role of pharmacists to promote the ‘safe, effective and efficient use of drugs’, particularly for those with multiple chronic conditions (e.g. by reducing drug-related adverse events and promoting adherence) (469,470). In the Netherlands, for instance, pharmacists are able to provide emergency prescription refills, renew and extend prescriptions, and change drug/dosage formulation. Further, England, which arguably is the most advanced in this area, also allows pharmacists to prescribe for minor

ailments (e.g. morphine, amphetamines, clonazepam),¹⁰¹ initiate prescription drug therapy, as well as order and interpret laboratory tests (469,470).

Increasing the role of pharmacists has the added benefit of relieving some of the burden placed on physicians who are required to keep up to date to changes in the EKO (e.g. changes in price) in order to prescribe economically (as outlined within the Richtlinien über die ökonomische Verschreibweise von Heilmitteln und Heilbehelfen, RöV 2005). For example, INN prescribing could be handled solely by pharmacists.

Advanced generic policies in the outpatient market can contain pharmaceutical expenditure. For example, without such policies, patients who are prescribed originator drugs within hospitals are likely to continue using such drugs upon being discharged (i.e. within the outpatient sector) (465).

Procurement of medicines

In addition to the policies outlined below, please refer to the section on HTA, given the role of HTAs in determining which medicines should be procured and thus reimbursed through social health insurance.

Interface management

The dual financing of healthcare also applies to pharmaceuticals where inpatient and outpatient drugs are financed by hospitals and health insurance carriers, respectively. This arrangement is problematic for many reasons, including:

- Fostering an environment that encourages cost-shifting between the two sectors, particularly for high-cost medicines (noting that this issue has been partly addressed by the establishment of the Medikamentenkommission (Healthcare Reform 2013), who handles cases where inpatient and outpatient sectors cannot agree who is responsible for reimbursement; largely related to high-cost medicines)
- Poor coordination of pharmacotherapy for patients moving from the inpatient to outpatient sector (or vice versa)

¹⁰¹ Pharmacists can prescribe any controlled drugs on within Schedules 2,3, 4 or 5 (excluding diamorphine, dipipanone or cocaine for the treatment of addiction) (see: <https://www.gov.uk/government/publications/controlled-drugs-list--2/list-of-most-commonly-encountered-drugs-currently-controlled-under-the-misuse-of-drugs-legislation>) (471,472).

- Patient uncertainty given EKO and hospital formularies may not be aligned, however, in theory this should be the case (as outlined within the 15a agreement of 2005 healthcare reform; §24(2) KaKuG) (see Figure 150) (465,473).

Debates regarding issues arising from Austria’s dual financing system, specifically in regard to its impact on pharmacotherapy, are not new. For example, Vogler *et al.* (2014) noted that there ‘has been increasing awareness of the need to learn about hospital-related pharmaceutical policies and to improve the management of pharmacotherapy at the interface of the inpatient and outpatient sectors’ (465).

It is therefore recommended that further effort is undertaken to improve ‘interface management’ between inpatient and outpatient pharmaceutical sectors (i.e. building upon strategies outlined in Figure 150). For example, by:

- Developing a joint budget for pharmaceuticals across the spectrum of care, however, as detailed throughout this report, this policy is unlikely to be implemented in the near future. As a first step, however, serious consideration could be given to a unified budget for high-cost medicines to avoid significant cost-shifting.
- Enhancing the role of the Medikamentenkommission to include formal communications on all medicines, not just medicines which neither inpatient nor outpatient sector are willing to take responsibility for (474).
- Ensuring information regarding drug prescriptions within in ELGA are digestible for potential prescribers (i.e. physicians working in either/both inpatient and outpatient sectors) (refer to policy options regarding IT for further details).

Figure 150: Projects to improve interface management between inpatient and outpatient pharmaceutical consumption

Discharge letter

Within the 15a agreement of 2005 healthcare reform (§24(2) KaKuG), when a hospital discharges a patient, they are required to take into account rules outlined within EKO and the RÖV, as applied within the outpatient sector. Within the discharge letter, a comment that there is no objection for switching recommended pharmaceutical to a generic, if available. However, as outlined by the PHIS Report (2009), failing to do so is not associated with a penalty.

Hospital medical staff (Medical Service)

Medical staff from social health insurance are placed within hospitals to provide assistance in regard to the provisions of drugs in the outpatient sector. This service aims to improve the transition of patient medical therapies between the inpatient and outpatient sector.

Transition nursing (Überleitungspflege)

Interface management is also enhanced by transition nursing, and case management coordinators.

Source: (473)

Summary of policy options for pharmaceutical expenditure and procurement

In regard to pharmaceutical expenditure, the following three policies are recommended. First, efforts to build international relationships should be encouraged in order to gain a better understanding of transaction prices associated with drugs in the outpatient market (which currently relies on ERP using list prices). Second, consideration should be given to modifying domestic regulation on statutory prescription drug price cuts so that they are linked to patent expiration as opposed to generic drug entry. Finally, to limit risk on behalf of the payer and to promote efficient use of resources, the implementation of MEAs is advised.

Further efficiency gains could be achieved through the implementation of more rigorous generic policies. To assist the implementation of generic policies and relieve administrative burden from physicians, consideration could be given to enhancing the role of pharmacists, which would follow trends in countries such as the UK and the Netherlands. Example generic policies include INN prescribing, generic substitution, and could also extend to incentives to encourage physicians to prescribe generics (e.g. linking payments to the proportion of prescriptions comprised of generics).

Lastly, it is recommended that further efforts are made to improve interface management between inpatient and outpatient pharmaceutical sectors. For example, via joint budgets, enhancement of the Medikamentenkommission, and ensuring ELGA is fit for purpose.

Legal considerations

Even though no particular constitutional impediments have to be faced with respect to this option, some legal amendments would be required, for instance, pharmacists are not allowed to prescribe medicines themselves.

7 Public health and disease management

Chapter 7 explores topics related to public health and disease management. Specifically, the chapter covers ill-health prevention, health promotion and health literacy, in addition to case and care management, as ways to improve patient outcomes.

7.1 Health prevention, promotion and literacy

7.1.1 Overview

Health literacy is generally defined as the knowledge, motivation and competence to find, understand, appraise and use information in ways which promote and maintain good health. By improving people's access to health information and their capacity to use it effectively, health literacy can play a significant role in the empowerment of individuals, improvement of quality of life and reduction of inequities in health (475–477). The following section summarises recent efforts in strengthening health literacy in Austria and draws on good practice examples from the Netherlands and England.

7.1.2 Health literacy in Europe

The European Health Literacy Project

Background

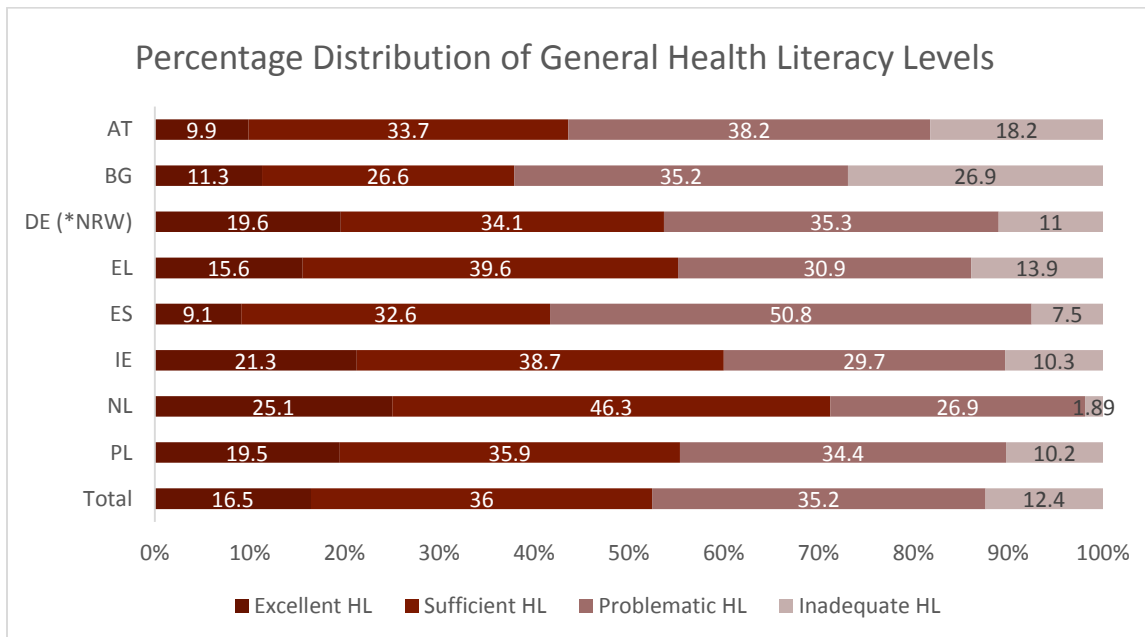
Despite playing a key role in health promotion, there is limited information about the status of health literacy in Europe (478). The European Health Literacy Project (HLS-EU) was initiated in 2011 to address these information gaps. As part of the initiative, eight EU member states (Austria, Bulgaria, Germany¹⁰², Greece, Ireland, the Netherlands, Poland and Spain) took part in a survey to assess and compare health literacy competencies between countries (478). The survey found that health literacy levels varied substantially between these member states, reflecting health policy challenges of different degrees. Furthermore, the study highlighted a social gradient that needs to be considered in the design of effective public strategies. For instance, certain population groups, such as the elderly and those with lower education levels or social status, had higher proportions of people with limited health literacy (479).

¹⁰² The survey only included the federal state North Rhine-Westphalia.

Austria's performance in the HLS-EU

Notably, Austria scored below the EU-8 average, with more than half of the surveyed population showing problematic or inadequate levels of health literacy in the areas of health care, disease prevention and health promotion (please see the figure below for an overview of the countries' performances in the HLS-EU). Specifically, only 9.9% of the Austrian study population had excellent general health literacy skills compared to the EU-8 average of 16.5%, and 25.1% in the Netherlands. Concurrently, 18.2% of the surveyed participants in Austria had inadequate general health literacy, which is significantly higher than the EU average of 12.4% and the Dutch score of 1.89%. However, significant differences also persist on a regional level in Austria. Findings show that merely 36% of residents in Vorarlberg had limited health competencies, as compared to almost twice as many in Styria (i.e. 63.3%) (479).

Figure 151: HLS-EU distribution of general health literacy levels across countries

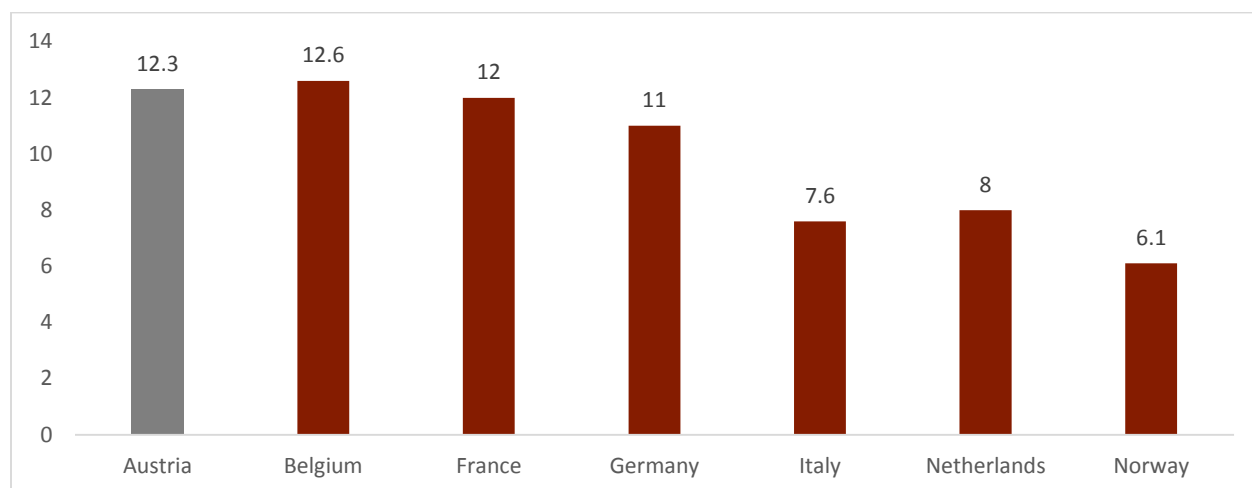


Health behaviours, health outcomes and health care use in Austria

Limited health literacy skills can have a significant impact on health behaviours, health outcomes and health care use, which is also captured in the strong association between low health literacy and poor self-assessed health (480). Some of the detrimental effects of low literacy levels on health care use may be reflected in Austria's high hospitalisation rates. For instance, in 2014, 26,276 people per 100,000 inhabitants were hospitalised for at least one night, resulting in more hospitalisations than in any other

OECD country (481). In addition, the low health literacy levels may be associated with unhealthy behavioural patterns. With only 11.5% of respondents reporting daily physical exercise, the rate is substantially lower than the European average of 26.2% (479). However, in spite of the low competency levels in Austria, no significant deviations from the EU average were observed for alcohol consumption and smoking among adults. By contrast, the share of adolescent smokers is significantly higher in Austria than in other European countries. For instance, the relative share of 15-year olds, who smoke at least once a week, is with 27.3% significantly higher than in other countries like Germany or Switzerland, where the share is 14.9% ad 16.9%, respectively.

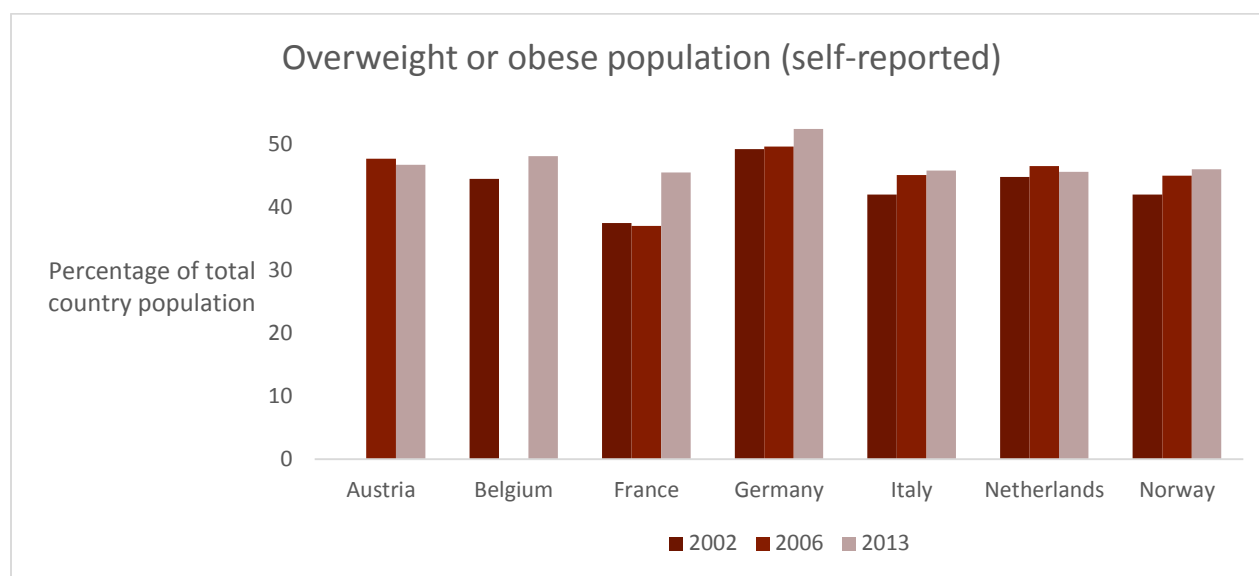
Figure 152: Alcohol consumption of individuals aged 15 years and older across European countries (litres per capits (15+))



Source: *OECD Health Statistics 2016*

Moreover, the share of men and women, who are overweight or obese, continues to increase. For instance, in 2012 17.9% and 9.7% of women have reported overweight and obesity, respectively, and the number rose to 10.7% and 20.6% in 2016. In contrast, the share of men, who are overweight, slightly decreased from 37.4% in 2012 to 37.2% in 2016, while the obesity rate decreased from 14.9% to 13.4%. However, compared to other countries, Austria has the lowest share of obese people in Europe (i.e. 20.2% of the population compared to the EU average of 25.7%) and the average BMI tends to be in the normal range, with 45.5% reporting a normal BMI compared to only 38.8% in Europe (please see the figure below for a comparison with other European countries) (479).

Figure 153: Overweight or obese population (self-reported) across European countries



Source: OECD Health Statistics 2016

Entities and practices promoting health literacy

Austria

With the aim to further promote health literacy competencies, some countries have established platforms and advisory bodies at a national level (482). For example, in line with the National Health Goals and the Health Promotion Strategy, the Ministry of Health Federal initiated, in collaboration with Health Commission, the Austrian Platform for Health Competence (ÖPGK) in 2014 (483). The main objective of the platform is to support the nationwide and sustainable attainment of the third National Health Goal, which aims to improve health literacy in the population, as well as the framework conditions for it and the provision of information. Measures for the implementation of the third goal include the following: (1) measures to improve health competency among adolescents, people of working age and the elderly, with particular attention to vulnerable groups, were set up, (2) the aforementioned measures reach the respective population groups, and (3) the relevant institutions and organisations at federal, state and municipal level are connected in a structured form. In addition, the Health Target partners (*Bundeszielsteuerungspartner*) have stipulated that the proportion of Austrians with ‘adequate’ and ‘excellent’ health competences in the overall HLS-EU index should be improved to 55% (i.e. operative objective 8.3.2). As part of the overall framework of the health goals, it was promulgated that 50% of the

financial resources of the Health Promotion Funds (*Gesundheitsförderungsfonds*) were to be used for prioritised goals, including health competency, for the period 2013 to 2016.

The five key functions of the ÖPGK encompass the support and improvement of long-term health literacy in Austria; the fostering of joint learning, network structures, collaborations and exchange of knowledge; the bridging and alignment of measures between politics and society; increasing comprehension, knowledge transfer and innovation; and lastly, the development of measures for monitoring, reporting, transparency and quality control (484). A prospective timeline until 2032 was foreseen for the ÖPGK, including regular evaluations of and adaptations for continuous development of the entity. For the year 2017, the following two areas were prioritised: qualitative written health information and quality of conversation in the health system.

In addition, the online self-information portal on health, *Gesundheit.gv.at*, was set up by the Ministry of Health to collate and provide an overview of relevant information on health promotion and ill-health prevention to the public. Information is available on healthy living, such as physical exercise, nutrition and mental health, as well as on specific diseases, including cancer and cardiovascular diseases.

Netherlands

Similarly to Austria, the Netherlands have initiated a platform for health literacy in 2010. The goals of the so-called National Alliance for Health Literacy are to improve health literacy competencies and social inclusion (485). The alliance comprises more than 60 member organisations that represent patients, providers, health institutions, insurances, academia and the business community. Vital parts of its strategy include the promotion of health literacy courses and training programmes among clients and patients. In addition, the alliance supports health professionals with identifying and addressing health literacy issues in patients. It is also involved in work on making written, digital and oral health communication understandable to the general public (485).

Notably, the Dutch strategy to improve health literacy involves multiple stakeholders. Besides the alliance, these include patient groups and the legislative body. The patient groups, which tend to form alliances based on specific diseases, are well organised and represented by an umbrella organisation for patients (486). This organisation has considerable negotiation power in relation to health care and insurance providers. For example, at an institutional level this is reflected in the negotiations regarding the implementation of patient-friendly measures between the patient councils and management of providers (486).

In addition to the active work and lobbying by patient groups and the association, legislation plays a vital role in strengthening efforts to improve health literacy. For example, in the Netherlands patient rights are defined in legislation, which specifies that health care providers must provide proper understandable information, e.g. regarding treatment (487). Additionally, providers must receive a patient's approval before treatment can be provided. Legislation is continuously enhanced through contributions by the patient- and consumer organisations. However, insurance providers can contribute to this development as well. For instance, health insurers can request in their contracts that providers pay particular attention to vulnerable groups and improve health communication, if it is associated with cost-reductions (487).

England

Novel policies to foster health literacy are also underway in England. The NHS England and Public Health England have made investments in innovative projects to develop, test and implement a range of practical interventions to improve the former (488). Some of these activities will include an evaluation of medical staff training in different settings, as well as testing a module on health literacy in the higher education setting (488). The NHS England also supports other projects in this area, such as funding the Health Literacy Organisation. The aim is to curate a collection of health literacy resources in order to facilitate the access to information for practitioners (489).

In England particular emphasis is placed on improving health communication. As part of these efforts, the so-called Information Standard Certification Scheme was introduced. The scheme aims to ensure that organisations produce evidence-based health care information for the public, which is clear, accurate, balanced and updated (490). Furthermore, good health communication practiced by doctors plays a key role in helping patients develop their health literacy skills (491). Several studies have found that doctors do not necessarily adjust their communication, even though patients differ in their levels of health literacy (492). Therefore, several concrete steps must be taken to improve communication between doctors and patients. These include, for example, making sure that doctors correctly establish the patient's level of understanding at the beginning of the conversation; speaking slowly, avoiding jargon and asking patients to repeat critical information ('teach back') (491).

Health literacy programmes for migrants and refugees

Austria

The clear provision and dissemination of information could also play a significant role in reducing health disparities between population groups. For instance, findings show that persons with a migration

background living in Austria tend to report worse self-assessed health than native Austrians (493). They are also less likely to make use of preventive and health promoting measures. Instead, persons with a migration background are more likely to visit hospital outpatient departments than GPs or specialists (493). This may be due to limited knowledge of the Austrian health system and access to primary care, language barriers, fear over discrimination, and lack of social networks, among other reasons.

In order to improve access to care for individuals with a migration background, 12 European countries, including Austria, have joined in a pilot project called *The Migrant Friendly Hospitals Initiative*. The initiative is a collaboration between health experts, NGOs, and hospitals with the goal to further create awareness of migrant-friendly, culturally sensitive health care and promotion (494). It employs similar culturally adjusted communication strategies, as described below in England and the Netherlands.

Netherlands

Given the similar concerns in the Netherlands, the Dutch National Centre of Expertise on Health Disparities (Pharos) focuses on strengthening the primary care system in disadvantaged neighbourhoods (495). Concurrently, it also promotes the involvement of migrants and persons with lower education levels in patient organisation. Another key focus of Pharos is fostering the safe and responsible medication use among migrant patients. For example, in collaboration with the Dutch Association of Pharmacists (*KNP*), Pharos aims to complement pharmacist's guidelines in order to better equip professionals when issuing medicines to specific patient groups. This may also require additional education and training for pharmacists (495). Furthermore, the Netherlands has gained extensive experience in special health communication for migrants and minority groups (496). Policies include communicating health information, often in foreign languages, and employing information material, interpreters and trainers. One approach specifically designed for children with a migration background is based on making interventions and methods more culturally sensitive (496).

United Kingdom

A similar approach has also been welcomed in the UK, as studies show that in order to make information more accessible, it needs to incorporate and consider culturally relevant idioms, references and visuals (480). For instance, information on preventive measures is translated or delivered by persons with common cultural backgrounds. These initiatives, like in the case of Netherlands and Austria, are introduced at the local level (495).

7.1.3 Policy options: Health literacy

Improving the health communication between patients and doctors

Good health communication practices by physicians are central to helping patients develop their health literacy skills. As patients differ in their levels of health literacy, it is important that physicians adjust their communications. Several concrete steps can be taken to ensure the former. For instance, ensuring that physicians correctly establish the patient's level of understanding at the beginning of the conversation, speak slowly, avoid jargon and ask patients to repeat critical information. The current evaluation criteria developed by the Chamber of Physicians already includes assessments on whether a patient can receive in advance information on foreign language speaking practitioners in a practice (1.6). Section 15 focuses on patient communication and patient information, and includes for instance the evaluation criteria, as to whether relatives, attendants or other persons were made aware of the necessary information, in the case that a patient did not understand the contextual information (15.4). Therefore, additional criteria that encompass the communication process per se, such as speed of speaking, avoiding jargon and asking to repeat information, could be introduced in the evaluation criteria or in contracts to ensure good health communication practices by physicians. Physicians could also be requested to pay further attention to vulnerable groups and where possible, cater to these by incorporating and considering culturally relevant idioms, references, visuals and information material in other languages.

Ensure nationwide qualitative health information

With the large amount of health information of varying levels of quality available online, patients may often feel overwhelmed or access unreliable, non-evidence based material, which may undermine treatment. Therefore it is important to introduce national information portals that provide access to evidence-based health and care information for the public. Several efforts have already been undertaken in this field in Austria, including the set-up of an official self-information online portal and the ÖPGKs initiative on well-written health information. However, such information sites will only reach the right individuals if the written and digital information is understandable to the general public and promoted across all various groups of the population. Therefore, efforts to render the information clear and easily understandable, while concurrently ensuring it is in line with the latest scientific standards, need to be upheld. Furthermore, providing additional language settings for the national self-information online portal, which is currently only available in German, could facilitate and increase access to health information for vulnerable groups, such as migrants. An additional option could be to develop a similar, interactive online portal for children and young adolescents that could be promoted at schools.

Involvement of multiple stakeholders

The involvement of multiple stakeholders constitutes a vital part to identifying those with difficulties in health literacy and simultaneously ensuring, promoting and strengthening health literacy in the general population. One of the measures for the attainment of the third national health target on health literacy in Austria assesses, as to whether the relevant institutions and organisations at the federal, state and municipal level are connected in a structured form. Therefore, the monitoring of the strength and maintenance of these coordination efforts should be continued and evaluated on an on-going basis. Furthermore, specific patient contact points should be further strengthened and promoted, such as patient organisations and patient ombudsmen, who could provide support and directions to individuals with difficulties in health literacy. Similarly, physicians play a key role in identifying individuals with limited health literacy skills and could therefore refer the respective individual to patient contact points, health literacy courses and programmes. At the same time, the role of pharmacists in establishing a patient's level of health literacy could be increased. This may require additional education programmes, such as case-based learning to teach pharmacy students health concepts and skills to manage patients with limited health literacy.

Module on health literacy in the education setting

The development of health literacy competency starts with primary and secondary education. Children and young adolescents may receive education on nutrition and exercise e.g. as part of a Biology and sports courses, however, topics concerning overall lifestyle and health behaviours and how these are linked to health outcomes are not cohesively covered. Therefore, an introduction of a more coherent coverage of this topic at high schools could expose children to health information and knowledge from an early age on, while ensuring that children across all population groups are reached, which could establish a solid and uniform health literacy knowledge basis.

Summary of policy options

The European Health Literacy Survey in 2011 has highlighted significant gaps in health literacy in Austria compared to other European countries. Since then, large efforts have been made to improve the health literacy competency across the population. For instance, the topic was defined as a priority target in the 10 target controls and incorporated in the target control agreement, for which a project group was created to work on the quality of health communication. In 2014, the Ministry of Health Federal initiated, in collaboration with Health Commission, the Austrian Platform for Health Competence (ÖPGK) with the

objective to support the sustainable attainment of the third national health target. Furthermore, a national self-information portal was introduced to ensure nationwide access to reliable, evidence-based health information. Other initiatives include the Migrant Friendly Hospitals Initiative, which employs e.g. culturally adjusted communication strategies to facilitate access to care for individuals with a migration background.

Following the introduction of these initiatives, an upcoming health literacy survey (HLS-Neu) is planned to evaluate as to whether these efforts have had an effect on health literacy levels in Austria. Although important developments have already taken place in Austria, the following additional practices are suggested to support the attainment of higher literacy levels. (1) Clear health communication between patients and doctors could be further improved by specifying explicit criteria pertaining to the communication process (e.g. ‘teach back’; avoiding jargon) in the Chamber of Physician’s quality evaluation criteria of physician practices. (2) In order to further expand the dissemination of health information, the national self-information portal could offer a number of additional language settings, other than German, and a child-friendly information site could be developed as well. (3) The role of various stakeholders in promoting health literacy should be increased. For instance, a point of contact for patients with limited health literacy levels should be defined to offer trainings and support, such as patient ombudsperson offices, while physicians could direct the respective patients to these contact points. Pharmacists could be further trained to identify and manage patients with lower literacy levels. (4) Last, a module on health literacy in the education setting could be introduced.

Legal considerations

No particular constitutional impediments have to be faced with respect to these options.

7.1.4 Disease prevention

Overview

Disease prevention focuses on prevention strategies to reduce the risk of developing chronic diseases and other morbidities. There are three levels of prevention, which differ in the point in time when the preventive intervention takes place: primary prevention is initiated prior to the onset of a disease and is aimed at assisting in the elimination of health-damaging factors. For example, measures relate to hygiene, vaccinations, or preventive measures during pregnancy. By contrast, secondary prevention is focused on intervening existing health-damaging situations. Procedures in the area of secondary prevention include,

for example, the detection and treatment of pre-clinical pathological changes. Tertiary prevention concentrates on restoring health after the medical condition occurred and hence refers to the management of long-term or on-going illnesses to avoid re-hospitalisation. As a result of tertiary prevention, consequential health-damages may be prevented and the rehabilitation of patients facilitated¹⁰³. Therefore, disease prevention plays an important role in supporting the general public health, whilst decreasing costs of preventable disease burdens.

Based on WHO data (2014) on country-specific proportional mortality from preventable chronic diseases as a percentage of total deaths, and by comparing Austria's performance to other European countries, the following section has identified two key areas that require further attention. These include the disease prevention of cardiovascular diseases and diabetes, as highlighted in the table below. Furthermore, with regards to the prevention of infectious diseases, a comparison of childhood vaccination rates has revealed notably lower rates in Austria than in other European countries that can lead to preventable burdens of disease. Therefore, this section will provide an overview of vaccination-preventable disease-, diabetes- and cardiovascular care in Austria and will outline policy options to improve performance in these areas.

Table 88: Country-specific proportional mortality as a percentage of total deaths across European countries (498)

Proportional mortality (% of total deaths, all ages, both sexes)	Austria	Belgium	France	Germany	Italy	Netherlands	Norway	UK
Cardiovascular diseases	43%	30%	28%	40%	37%	29%	33%	31%
Cancers	27%	27%	31%	26%	29%	33%	27%	29%
Chronic respiratory diseases	4%	7%	4%	5%	5%	6%	6%	8%
Diabetes	4%	2%	2%	3%	4%	2%	2%	1%
Other NCDs	14%	21%	22%	17%	17%	20%	19%	20%

¹⁰³ (497)

Proportional mortality (% of total deaths, all ages, both sexes)	Austria	Belgium	France	Germany	Italy	Netherlands	Norway	UK
Communicable, maternal, perinatal, and nutritional conditions	3%	7%	6%	5%	4%	6%	8%	7%
Injuries	5%	6%	7%	4%	4%	4%	5%	4%

Source: WHO, *Non-communicable diseases (NCDs) Country Profiles, 2014*

Vaccine-preventable diseases

Vaccines are one of the most cost-effective strategies to prevent infectious diseases in populations (499). Globally, an estimated 2-3 million lives are saved each year as a result of vaccines (500). Many developed countries have implemented robust child vaccination programmes and initiatives, and comprehensive vaccination coverage in childhood constitutes a main indicator for public health (501,502).

As immunisations play an important role in promoting public health, several countries have introduced policies to ensure or support vaccinations of children. These can either address the demand side, i.e. child’s caretakers, or the supply side, including health care providers. For instance, in Germany a new proposal was passed to make kindergartens inform authorities, if parents fail to prove they have attended a doctors' consultation on child vaccinations. To date, authorities can already impose a fine of 2,500 euros on parents who persistently refuse to attend the vaccine consultations (503). A more stringent approach was taken in Italy, where children must be vaccinated against 12 common illnesses before they can enrol in public schools. If children are not vaccinated by the age of six, which is the school starting age, their parents will be fined (504). By contrast, the UK has shifted the focus from caretakers to health care providers. As part of the mass childhood immunisation programme (MCI), GPs receive payment for childhood immunisation through the PCT global sum and an additional target payment. More specifically, GPs receive a higher payment if they immunise 90% of all the children on the partnership list who are aged two. Lower payment is received if the average of courses completed is 70%, whilst there are no

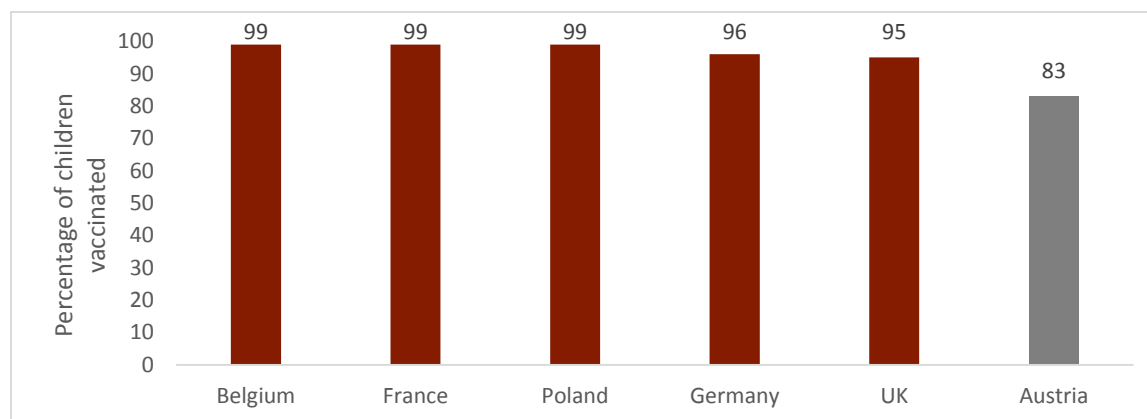
payments for any target below 70% (505). In comparison, no demand- and supply-side policies have been implemented in Austria to date, which is reflected in the relatively lower childhood vaccination rates.

Immunisation rates in Austria

Childhood immunisations

In comparison to other OECD countries, childhood immunisation rates are noticeably lower in Austria, which may be due to factors such as vaccine refusal due to personal beliefs and hesitancy, as well as barriers within the health care system (502). The low rates are particularly evident in the case of immunisations against diphtheria, tetanus and pertussis (DTP). For instance, in almost all OECD countries the proportion of one-year olds, who have received three doses of the combined DTP vaccine within the recommended timeframe, are greater than 90%, and in most countries the rates are equal to or above 95%. Merely three countries, namely Austria, Iceland and Mexico, reported vaccination rates at or below 90%, with Austria reporting the lowest rate at 83%, as shown in Figure 154 (506).

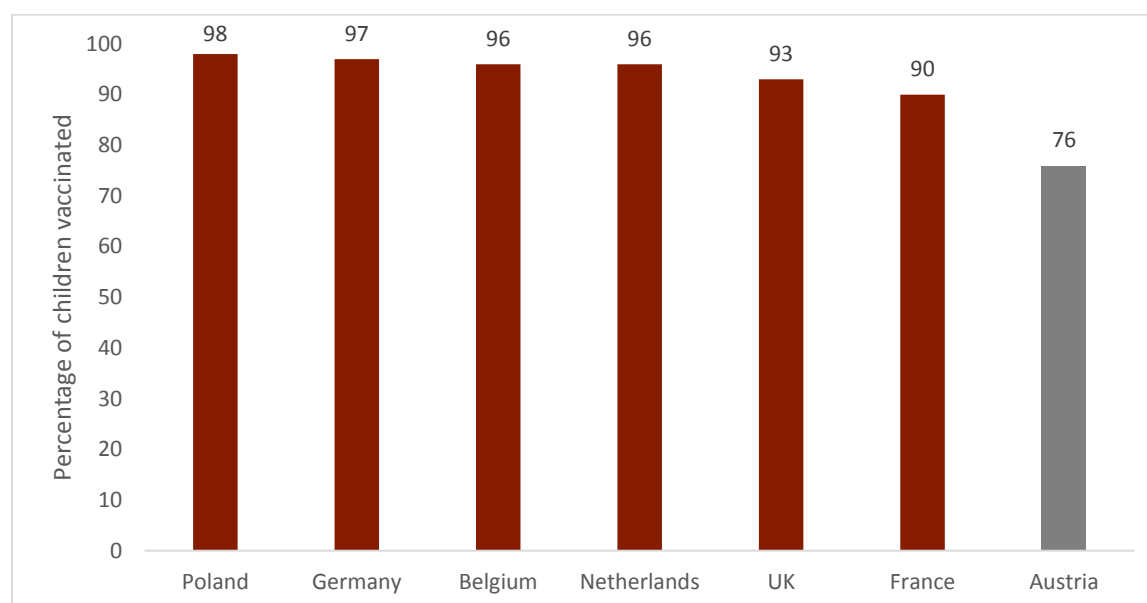
Figure 154: Childhood vaccination rates (%) for diphtheria, tetanus and pertussis (DTP) among one-year olds across a number of European countries (506)



Source: *OECD Health Statistics, 2016*

The comparatively low rate for measles vaccines in Austria is particularly outstanding. Even though vaccination rates for measles immunisations tend to be marginally lower than those for DTP, which may be due to concerns about possible associations between measles vaccinations and brain damage, all OECD countries, except for Austria, Denmark, France, Iceland and Italy, report rates that are above 90% or at least 95%. In fact, the proportion of children under the age of one, who have received at least one dose of measles-containing vaccine, is merely 76% in Austria, as depicted in Figure 155 (506).

Figure 155: Proportion (%) of children under the age of one, who have received at least one dose of measles-containing vaccine (506)



Source: *OECD Health Statistics, 2016*

Immunisation programme in Austria

Vaccination facilities and vaccine production

There are no dedicated vaccination facilities (*Impfservice der Gesundheitsämter*) in Austria, except for the regional and district public health centres, which are primarily located in larger cities. These centres are de-centralised and may differ in the types of vaccines offered. Furthermore, units at these centres tend to be small, with only few people making use of these centres. Generally, vaccines are administered by doctors or pediatricians in their private practices.

Most pediatric physicians store vaccines at their practice, given the predictable use of specific childhood vaccines. However, this is not necessarily the case for general practitioners treating adults. Except in the case of influenza vaccines, as some practices may buy these in stock during specific season, adults must usually make an appointment with a GP to first receive a prescription for a vaccine, which subsequently needs to be redeemed at a pharmacy, before being administered the vaccine during a second appointment at the physician practice. Contrary to recent international developments (507), community pharmacies do not provide walk in vaccination services.

Only a limited number of vaccines are produced in Austria, such as the vaccine against tick-borne encephalitis. However, there is no national vaccination company in Austria.

Coverage of vaccines

The vaccination programme for children is organised within the public health setting and financed by the federal government, the federal states and social insurance funds, which share the costs of vaccines. As such, all childhood vaccines, as well as the physician service, are free of charge for children up to the age of 15. The general coverage for childhood vaccinations is relatively homogenous, except for in the case of the vaccination for measles, mumps and rubella (MMR). In the case of adults, only the physician service is free of charge, not the actual vaccine.

Vaccination schedules

A national vaccination plan for the year 2017 has been defined and updated with the aim to provide physicians and those considering vaccinations a clearer overview of the recommended vaccines. This includes a special vaccination schedule for childhood vaccinations, which applies to all regions. In the case of adults, there exist guidelines for booster vaccinations. Furthermore, guidelines for travel-related vaccinations based on travel region and current risk are published as well.

An advisory vaccination schedule is developed annually by the Highest Sanitary Council (*Nationaler Impfgremium*). In consideration of the advice, which is generally accepted, the Ministry of Health publishes the official vaccination schedule, which is followed by all nine regions.

Documentation of vaccination rates

The regional level is given the task to provide vaccination coverage data to the national level, which is subsequently analysed and published. However, the vaccination status of residents living in Austria is often partially or not reported, and documentation may get lost. A nationwide, uniform collection of data has not been implemented yet.

7.1.5 Policy options: Vaccinations

Inclusion of vaccinations in the mother-child passport

The Austrian mother-child passport (*Mutter-Kind Pass*) supports health-related prevention for pregnant women and young children up to the age of 5 years by outlining all recommended and important check-ups, and is accessible to all pregnant female residents living in Austria. Following a successful completion of a number of the listed check-ups, families are eligible for a mother-child allowance (*Mutter-Kind-Zuschuss*). Currently, the passport does not include recommended childhood vaccinations. By adding a number of recommended vaccinations to the list of services, more families may become aware of

important vaccines and feel incentivised to immunise children, which could increase the overall rate of the currently low childhood vaccination rates in Austria.

Coverage of cost-effective vaccines for adults

While both the immunisation and related physician service are covered by health insurance for children up to the age of 15 in Austria, in the case of adults, only the treatment by a physician, not the vaccine, is reimbursed. Therefore, an additional coverage of adult vaccinations, where cost-effective, could potentially increase adult immunisation rates of a number of important vaccine-preventable diseases.

Introduction of vaccinations at pharmacies

Most pediatric physicians store vaccines at their practice, given the predictable use of specific childhood vaccines. However, this is not necessarily the case for general practitioners treating adults. Except in the case of influenza vaccines, which some practices may buy in stock during specific season, adults must usually make an appointment with a GP to first receive a prescription for a vaccine. Following, individuals need to buy the vaccine at the pharmacy and return to the GP for a second appointment, during which the vaccine is injected – a process that is time intensive and inconvenient to many individuals. Against this background, an increasing number of countries have started to offer walk in vaccination services at pharmacies (507). Therefore, by introducing walk in vaccination and injection services at community pharmacies, following a prescription by a physician, the immunisation process could be rendered more flexible, time-saving and convenient to patients.

E-vaccination to improve monitoring and re-calling of- as well as data collection on- vaccinations

The vaccination status of residents living in Austria is often partially or not reported. Furthermore, documentation on immunisations, such as the paper-based WHO-compliant vaccination record, may get lost, in which case a vaccination database and electronic vaccine record may provide time- and site-independent access to information for both healthcare staff and patients. As such, individuals could obtain an optimised and more convenient overview of their immunisation status and vaccination schedule, while preventing unnecessary or duplicate immunisations and possible adverse events from drug-to-drug interactions. In addition, a recall system, similar to the existing recall letter for the annual preventive check-up, could be introduced to ensure continuity of the vaccination schedule and thus ill-health prevention. Moreover, the introduction of a national electronic immunisation data collection system in Austria could improve the monitoring and evaluation of immunisation rates, which is currently based on a fragmented reporting system.

Summary of policy options

Vaccines are one of the most cost-effective strategies to prevent infectious diseases in populations and even though a number of initiatives to support the immunisation of children are in place in Austria, including a national vaccination schedule, free vaccines for children up to the age of 15, and the dissemination of information on vaccines, the childhood vaccinations rates are notably lower in Austria than in other countries. These low vaccination rates may reflect the absence of demand and supply side measures that have been introduced in other countries to ensure the immunisation of children, such as introducing legally binding consultations for caretakers, penalties for vaccination refusal or incentivising physicians to promote vaccinations. Furthermore, the Austrian care system primarily focuses on the immunisation of children rather than adults, which further increases gaps in the vaccination rates of the population. For instance, even though a physician's provision of a vaccine is covered by health insurance, the actual vaccines are not reimbursed for adults. In addition, the process to obtain vaccinations for adults is time-consuming and inconvenient, as most physicians do not store vaccines at their offices.

Therefore, a number of measures may be introduced to decrease disparities in immunisation rates between children and adults, whilst concurrently raising the overall rate of immunised persons in Austria. (1) For instance, further demand-side incentives could be implemented, such as including vaccinations in the mother-child-passport to incentivise immunisation of children, as well as extending coverage of cost-effective vaccines for adults. (2) A walk-in vaccination and injection services at community pharmacies, following a prescription by a physician, could render the immunisation process for adults more flexible, time-saving and convenient. (3) In addition, a vaccination database and electronic vaccine record may provide time and site-independent access to information for both patients and health care professionals, allowing for an optimised overview of immunisation status and vaccination schedule, whilst preventing unnecessary or duplicate immunisations, as well as possible adverse events from drug-to-drug interactions. A recall system could further ensure continuity of care. Concurrently, a national electronic immunisation data collection system in Austria could improve the monitoring and evaluation of immunisation rates, which is currently based on a fragmented reporting system.

Legal considerations

No particular constitutional impediments have to be faced with respect to these options.

7.1.6 Diabetes

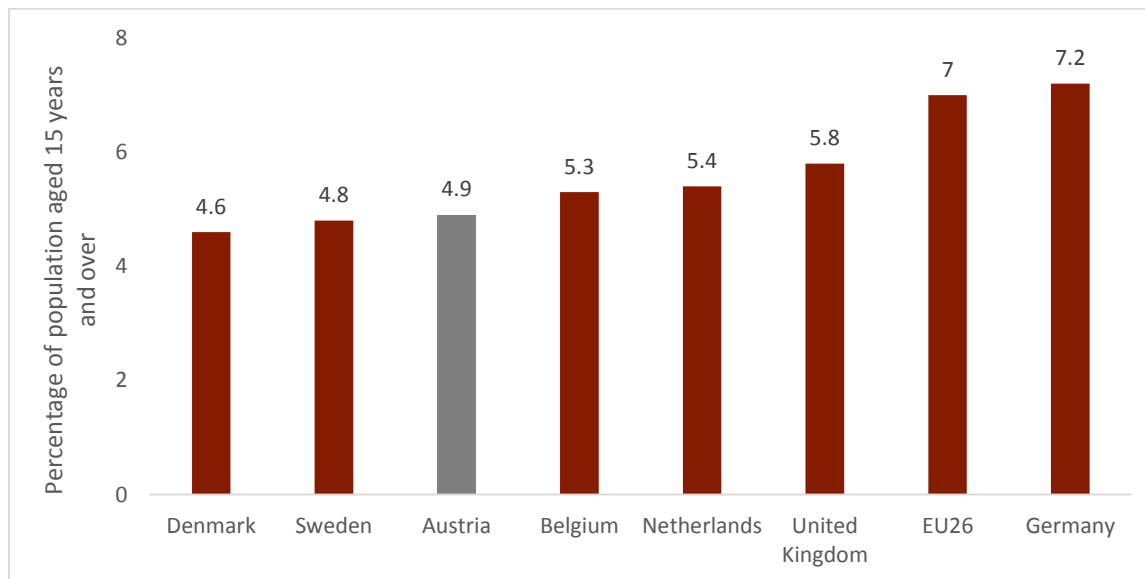
Diabetes is a chronic disease characterised by high levels of glucose in the blood. Type 1 diabetes occurs when the pancreas does not produce enough insulin, a hormone regulating the blood sugar. By contrast, Type 2 diabetes develops when the body cannot make effective use of the insulin it produces. As a consequence, untreated individuals with diabetes commonly have raised blood sugar, which can lead to serious damage over time. If left undiagnosed or poorly controlled, diabetic people have greater risks of developing cardio-vascular diseases, sight loss, renal failure, foot and leg amputation, as diabetes can damage several organs, including the heart, blood vessels, eyes, kidneys and nerves (17,508).

Simple lifestyle measures are effective in preventing or delaying the onset of type 2 diabetes in individuals. These include, for instance, the maintenance of healthy body weight through physical activity and healthy diet (i.e. decreasing intake of sugar and saturated fat), and avoidance of tobacco use (508).

Diabetes prevalence and trends in Austria

Approximately 6% of the Austrian population (i.e. 430,000 people) were diagnosed by a physician with diabetes (509). When comparing self-reported diabetes data based on the Health Interview Survey (2014), Austria appears to perform rather well, with merely 4.9% of people reporting diabetes. This prevalence rate is half of that reported in France, namely 10%, which constitutes the highest prevalence rate across the European countries. It is also 2.1% below the EU26 average of 7%, as depicted in the figure below (510). When looking at children specifically, approximately 0.1% of 0-14 year olds (i.e. 1,300 – 1,500 children) have been diagnosed with diabetes (509).

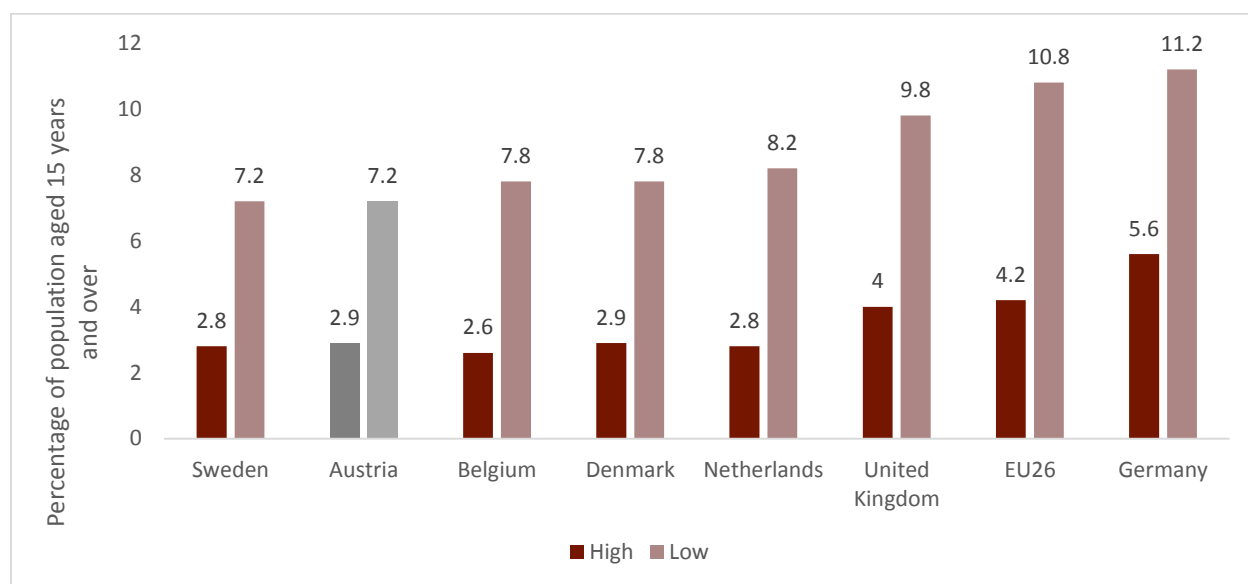
Figure 156: Self-reported diabetes in Europe, 2014



Source: *OECD Health Statistics, 2016*

However, self-reported data on diabetes can be susceptible to under-diagnosis and reporting errors (510). For instance, according to Federal Ministry of Health, approximately 8% to 9% of the Austrian population (i.e. 573,000 – 645,000) have diabetes. As such, an estimated 2% to 3% remain undiagnosed (i.e. 143,000 – 215,000). Furthermore, the rate of self-reported diabetes is particularly higher in those population groups with lower education, compared to those with higher education, as shown in the figure below. However, these differences are more pronounced in the female population. Furthermore, no differences in prevalence were found between genders, and between individuals with a migrant and a non-migrant background (509).

Figure 157: Self-reported diabetes by level of education in Europe, 2014



Source: OECD Health Statistics, 2016

Even though the prevalence rate may not seem as high as in other countries, the proportional mortality from diabetes as a percentage of all deaths in Austria is 4%, which is four times as high as in the UK and twice as high as in Belgium or France, as highlighted in country-specific proportional mortality as a percentage of total deaths across European countries (see table 88) (498).

Diabetes care in Austria

The treatment of diabetes patients takes place either through the recognised Disease-Management-Programme or the physician office. However, as highlighted in a report by the Federal Ministry of Health, the type and scope of these services may vary due to regional circumstances, regulations by federal states, variations in tariffs and training of personnel, as well as the in size of doctor's practices (509).

For patients with diabetes type 1, there are 95 diabetes outpatient departments for adults and 36 departments specifically for children and adolescents. These departments are within reach of 30 minutes for approximately 95% of the adult population (i.e. 19 years and older) and 79% of the children's population (15 years and younger) (509).

Disease-Management Programme (DMP) 'Therapie aktiv'

To further improve the treatment of diabetes mellitus type 2 patients and with the aim to reduce costs in the long-term, the disease management programme (DMP) 'Therapie aktiv – Diabetes im Griff' was

developed in 2004 by the Styrian sickness fund and the Institute for Biomedicine and Health Science of Joanneum Research on behalf of Austrian SHI, and subsequently implemented in 2007 across most regions in Austria (511,512). The programme has since then been adopted by other sickness funds (511).

In 2012, approximately 15.3% of eligible physicians participated in the DMP, which is voluntary and free of charge to both patients and physicians (511,512). Before signing up to the programme, physicians receive a basic training to become a so-called 'DMP-physician'. Upon completion of the training, DMP-physicians receive between 40 EUR – 72 EUR for each registered diabetes patient, as well as 21 EUR to 29 EUR per quarter¹⁰⁴ for supervisory care, depending on the federal state. Further training is also rewarded.

The programme encompasses the implementation of evidence-based clinical guidelines, performance of necessary medical examinations on a regular basis, as well the recording of information on medical parameters, treatment, target agreements and quality of life. Furthermore, patients receive lifestyle advice to improve health behaviours and both, the physician and patient agree on defining individual targets. To date, approximately 45,000 diabetic patients have signed up to the programme (512).

A number of studies have aimed to assess the impact of the programme on the patients enrolled. For instance, Ostermann *et al.* (2012) have found that the quality of outpatient care improved, while the rate of hospitalisations decreased for DMP-participants compared with controls in 2009 (513). Furthermore, a recent study by Riedl *et al.* (2016) observed a significantly lower mortality rate in the DMP-group, compared to those in routine care. The number of days spent in hospital, as well as the mean annual hospital cost were comparatively lower as well, which is reflected in the lower mean annual total costs of EUR 8226.80 for DMP-participants and EUR 9,321.10 for the control group. When looking at the cost of health care services, the study noted slightly higher outpatient physician services costs and lower hospital costs for the DMP group (512). Although these studies suggest a positive impact of the DMP programme on patients, it must be noted that the findings may be influenced by a number of confounding factors, such as severity of disease and education levels, which may affect whether a patient joins the DMP programme in the first place. As such, further evaluations of later stages of the DMP programme should be assessed.

¹⁰⁴ Some federal states only provide supervisory care benefits for a total of three quarters.

Programmes and initiatives

A number of initiatives to improve diabetes care have been implemented in Austria. For example, advanced training for diabetes counselling for physicians has been offered since the 1990s and approximately 850 physicians have received further training to date. In addition, a forum for quality assurance in diabetology (FQSD-Ö) had been founded in 1996 to improve the structural, process and outcome quality in diabetes care. A diabetes registry has already been established in Tirol, which aims to optimise the monitoring of diabetes patients, whilst simultaneously collecting epidemiological data (509). Furthermore, national action plans on nutrition (Nationaler Aktionsplan Ernährung, NAP.e) and physical exercise (Nationaler Aktionsplan Bewegung) have been introduced to focus on health risk factors to health, which also relate to diabetes. The Austrian Diabetes Association provides further information on regarding information events, and information contact points regarding diabetes care across the nine regions.

7.1.7 Policy options: Diabetes

Expansion of the diabetes disease-management-programme (DMP)

At present, type 2 diabetes patients can receive diabetes care either by voluntarily signing up to the established disease-management programme (DMP) or through routine care at a physician practice. However, differences in care and supervision between physicians within the DMP programme and those outside DMP prevail, as well as variations across non-DMP physician practices. For instance, two studies have found that outcomes, such as mortality, improved in the DMP programme, whilst concurrently decreasing costs compared to the control group (512,513). Although the findings may be influenced by other factors, such as selective sign up to the DMP programme, the studies may nevertheless reflect strengths of the programme, which is specifically outlined to rely on evidence-based practice and to offer patient-centred care with regular monitoring of patients. Therefore, in order to improve equity and quality of treatment, it suggested to further strengthen efforts in the disease management programme, which should be gradually expanded over time.

Remuneration of DMP-physicians

Patients with chronic diabetes require on-going care and supervision, in order to ensure adequate management of the disease. As a result, diabetic patients may constitute a comparatively more expensive patient group in a non-risk-adjusted contact capitation scheme, as is primarily the case in Austria, than single-case patients. Therefore, financial incentives have been introduced to further attract physicians

into the disease management programme. However, given the time-intensive treatment of diabetic patients, physicians may forfeit additional revenue. Therefore, the financial compensation should be assessed in order to ensure appropriate rewards in line with the time taken to manage diabetes patients, and to incentivise more physicians to enter the programme.

Training of physicians

Following the completion of a medical degree, post-graduate medical students in Austria undertake 5 to 6 year rotation training at hospitals (Postpromotionelle Ausbildung). A grid certificate (Rasterzeugnis) specified by the Chamber of Physicians outlines areas and procedures that need to be completed by trainees as part of their rotation. However, the grid certificate category 'basic training' does not include diabetes-specific training or how to manage patients, even though the management of diabetic patients may become particularly difficult in the case of secondary disease, such as kidney damage, where more attention needs to be paid to additional factors like dosage of medications. Therefore, inclusion of diabetes specific-tasks in the grid certificate may further expose physicians to additional training and as such improve the management of patients with diabetes.

Furthermore, continuing training constitutes an important factor to ensuring continuous high quality care. Consequently, a number of countries like Germany have introduced a re-certification of physicians e.g. every five years which may be regulated by law and may even be connected to sanctions in the case of failed completion. In Austria further training is regulated through an ordinance (Verordnung) of the Chamber of Physicians. As such, physicians receive a diploma if 250 points are collected (or 150 points in specific cases). However, there are no specifications on follow-up measures in the case of incompleteness. Therefore, it may be an option to make further training more binding by defining explicit follow-up measures in the case that physicians fail to follow the training.

Training of DMP-physicians

If part of the DMP programme, physicians are required to refer diabetic patients to diabetes outpatient departments in the case that management efforts (e.g. managing blood sugar levels) fail. This may lead to the decision of some physicians not to enter the programme in the first place, due to possibilities of losing patients. Therefore, the introduction of a voluntary training and a confidential supervision by experienced diabetes specialists may help overcome this issue.

Establishment of a national diabetes registry

About 2% to 3% of the Austrian population are estimated to live with undiagnosed diabetes (i.e. 143,000 – 215,000), a number that may be further underestimated. Although a diabetes registry has already been established in Tirol, which aims to optimise the monitoring of diabetes patients, whilst simultaneously collecting epidemiological data, fragmentation in the data collection prevails. By extending data collection efforts, a national diabetes registry could be implemented in order to improve the collection of data to monitor and evaluate trends in diabetes.

Summary of policy options

Even though the diabetes prevalence rate is below the EU average, diabetes constitutes a significant share of proportional mortality in Austria, after cardiovascular disease and cancer. A number of initiatives have been implemented since the 1990s to improve diabetes care in Austria, including a diabetes disease-management programme, diabetes counselling for physicians, a forum for quality assurance in diabetology, a diabetes registry, as well as national action plans for physical exercise and nutrition.

However, a significant number of diabetic patients remain undiagnosed, which may lead to further health deterioration. Furthermore, the quality and scope of care varies between patients enrolled in the disease management programme and those receiving routine care. And even though initial findings suggest the cost-effectiveness of the disease management programme, challenges to incentivise physicians to join the programme prevail.

Therefore, (1) an expansion of the diabetes disease management programme, which takes into consideration adequate financial incentives for physicians, whilst also ensuring training support through experienced diabetes specialists, may further harmonise the provision of diabetes care in Austria. Concurrently, recent efforts to build additional primary health care centres (PHCs) will complement the multi-disciplinary based delivery of diabetes care in Austria. (2) In addition, the grid certificate for trainee physicians could be extended to incorporate exposure to diabetes specific-measures, in order to further improve the management of (difficult) diabetes cases. (3) A national diabetes registry that could build on the existing registry in Tirol has the potential to enhance data collection and monitoring of diabetes developments in Austria. (4) Furthermore, efforts in the harmonisation of benefits packages across insurance carriers could further mitigate inequity in diabetes care, such as variations in the scope of benefits for services, including diagnostic tests.

Legal considerations

Even though no particular constitutional impediments have to be faced with respect to these options, some amendments to the professional law (especially the *Ärztegesetz*) as well as amendments to the current system of contractual agreements would be required, which might cause political impediments.

7.1.8 Cardiovascular diseases (CVD)

Cardiovascular disease (CVD) is a leading cause of mortality worldwide and causes more than half of all deaths across the European region. Although cardiovascular-related mortality has been decreasing in many countries in the past decades, cardiovascular diseases remain the most common cause of death (514). Yet, about 80% of premature heart disease and stroke is preventable (515). Prevention of CVD encompasses primarily the focus on reduction of risk factors that include tobacco consumption, serum cholesterol, systolic blood pressure, unhealthy diet, overweight and obesity, physical inactivity, and higher levels of alcohol consumption (514). Furthermore, preventive strategies include medical screenings for population groups at risk, as well as medical treatment e.g. in the form of cholesterol- and blood-pressure-lowering medications, in which case the latter has shown to be effective in reducing heart attacks (myocardial infarction) up to 75% among high-risk individuals (515). Therefore, the implementation and continuation of preventive strategies, including the management of blood pressure of patients at risks, is central to reducing morbidity and mortality of CVD.

Against this background, the community-based North Karelia Project was launched in Finland in 1972 to prevent cardiovascular diseases, and more specifically to assess the role of primary prevention in reducing observed coronary heart disease mortality. Based on previously identified risk factors in other large studies, including the British Medical Doctors Study and Framingham Study, the project targeted three classical risk factors of CVD, namely tobacco smoking, high serum cholesterol and high blood pressure. With the introduction of the project, several initiatives were taken to mitigate risks by focusing on behavioural change through community action and participation, in addition to screening of high-risk individuals and medical treatment. Furthermore, a systematic monitoring was introduced, with surveys being conducted on a 5-year basis (514).

A key finding of the project is that population-based prevention programmes constitute effective tools to reduce the disease burden and mortality from coronary heart disease (CHD). Such programmes included active anti-smoking campaigns and legislation that even led to the lowest smoking prevalence in Europe

in 2016, promotion of dietary change to reduce cholesterol levels (e.g. transition from fatty milk to low fat milk, reduction in butter consumption, increase in use of vegetables), and a combined strategy of lifestyle change (e.g. reduction of high salt intake) and use of screening and pharmaceutical drug treatment to lower blood pressure levels. Notably, more than 80% of the decrease in cholesterol levels could be attributed to dietary changes, while only 20% were explained by the use of drugs, such as statins. Therefore, primary prevention aimed at reducing CVD risk factors should be considered the main strategy to decrease the disease burden and mortality from coronary heart disease, while secondary prevention may confer additional benefit (514).

In addition, a recent modelling study to estimate the global premature cardiovascular mortality in 2025 highlighted that the reduction of specific risk factors, namely systolic blood pressure and tobacco use, may have a more substantial impact on future scenarios than other factors like levels of body mass index and fasting plasma glucose. Furthermore, a strategy focusing on multiple risk factors, rather than single factors, has a greater impact on reducing CVD-related premature death across all regions globally. However, in addition to focusing on combatting these major risk factors, decision-makers also need to take into consideration the capacity of the health care system to accomplish CVD reduction. This encompasses counselling patients with regards to e.g. glycaemic control and ensuring eligible high-risk patients receive drug therapy, as well as making affordable basic technologies and essential medicines (including generics) to treat NCDs available (516).

Prevalence and cost of CVD in Austria

Notably, CVD-related mortality as a percentage of all deaths in Austria is with 43% comparatively higher than in other European countries, as shown in the table below (498). For instance, in 2011 approximately 5,100 persons died because of a heart attack, 1,200 of a stroke and 500 of peripheral arterial disease (PAD). Specifically, men and the elderly had a higher likelihood of mortality than women and younger individuals (517).

Table 89: CVD-related mortality as a percentage of all deaths in 2013 (498)

Proportional mortality (% of total deaths, all ages, both sexes)	Austria	Belgium	France	Germany	Italy	Netherlands	Norway	UK
Cardiovascular diseases	43%	30%	28%	40%	37%	29%	33%	31%

Source: WHO, *Non-communicable diseases (NCDs) Country Profiles, 2014*

Given the large burden of disease, CVD is associated with high direct and indirect costs. For instance, in 2008 approximately €1.3 billion in costs were attributed to CVD care in the inpatient sector. This constitutes about 13% of public health expenditures. CVD was also associated with high indirect costs, such as inability to work, invalidity or premature death. For example, in 2011 approximately 600,00 sick leave days were due to cardiovascular disease. Furthermore, about 15,000 pensions were granted as a results of CVD-related reduced workability or incapacity to work (517).

Cardiovascular care and prevention initiatives in Austria

Given the high costs associated with CVD, the appropriate management of high-risk patients is paramount to preventing further morbidity, complications and hospitalisations. Individuals at risk are generally treated at general practices, and a recent trend in the development of primary healthcare centres allows for a multi-disciplinary management of CVD patients. Contrary to the management of diabetes, there are no disease management programmes for CVD in Austria.

An evaluation in 2014 of cross-national and cross-regional measures and projects to reduce CVD-related risk factors found that only a limited number of such measures are in place in Austria. Of these, approximately 45% constituted a combination of behaviour- and environment-related interventions, while 44% accounted for health behaviour-based interventions only. The majority of these measures focus on nutrition and physical activity, while other preventive areas are significantly underrepresented, which may be due to the fact that areas like tobacco and alcohol consumption are not explicitly covered in current strategy papers, such as the strategy for child and adolescent health or the Framework Health

Targets. Furthermore, the measures focus on multiple rather than single risk factors, and encompass workshops, trainings, information events, as well as coaching and consultations (517) .

7.1.9 Policy options: Cardiovascular disease

Large epidemiological studies have identified key risk factors of cardiovascular disease, including tobacco consumption, high systolic blood pressure levels, high serum cholesterol, obesity, physical exercise and diabetes mellitus. As previously highlighted, Austria has the lowest share of obese people in Europe and BMI tends to be in the normal range, in addition, the prevalence of diabetes is below the EU average. No significant deviations from the EU average were observed for alcohol consumption and smoking among adults. Furthermore, a number of initiatives with a multiple factor approach were introduced, as well as a national action plan on nutrition and physical exercise.

Despite the above, the proportional mortality of CVD-related deaths in Austria remains comparatively higher than in other EU countries. This may be explained by the low number of cross-national and cross-regional measures and projects to reduce CVD-related risk factors, with limited focus on key risk factors like tobacco and alcohol consumption. Concurrently the number of adolescent smokers is high compared to other EU countries, although it must be noted that policies were introduced recently to target tobacco consumption among adolescents and adults (e.g. smoking ban for adolescents below the age of 18 in 2018; smoking ban in public spaces initiated in 2009). In addition, the lack of coordination between primary and secondary care in Austria may further undermine effective treatment of high-risk and CVD patients. As highlighted in a pioneering observational study in Finland, primary prevention aimed at reducing CVD risk factors should be considered the main strategy to decrease the disease burden and mortality from CVD, while secondary prevention may support the former. However, given the recent developments to strengthen primary care and establish more primary health care units, as well as Austria's comparatively good performance in risk factor levels, further investigations are needed to examine and identify underlying factors of the high CVD disease burden and mortality in Austria. Based on the findings, appropriate measures could be introduced to reduce CVD-related morbidity and mortality.

Legal considerations

No particular legal impediments have to be faced with respect to these options.

7.1.10 Health promotion

International initiatives to improve disease prevention and health promotion

Developed countries in the EU are experiencing rising rates of chronic conditions caused by, amongst other factors, an ageing population. Challenges arising from conditions such as cardiovascular disease and diabetes, are recognised by governments as evidenced by the recent Joint Action on Chronic Diseases and Health Ageing across the Life Cycle (JA-CHRODIS), which is funded by the European Commission (518).

JA-CHRODIS represents a three-year (2014-17) European collaboration to ‘validate, exchange and disseminate good practice’ on policies related to chronic diseases, specifically, on health promotion and prevention, multi-morbidity and diabetes. Today, JA-CHRODIS is made up of representatives from 25 European countries, which includes over 70 partners from national and regional health departments and research institutions (518).

To achieve the initiative’s overarching objective of transferring knowledge among member states, a number of ‘work packages’ (WPs), outlining relevant activities, have been defined. An overview of each of the seven WPs is provided in Table 90. Details on each how each of the WPs work together is outlined in Figure 158 (518).

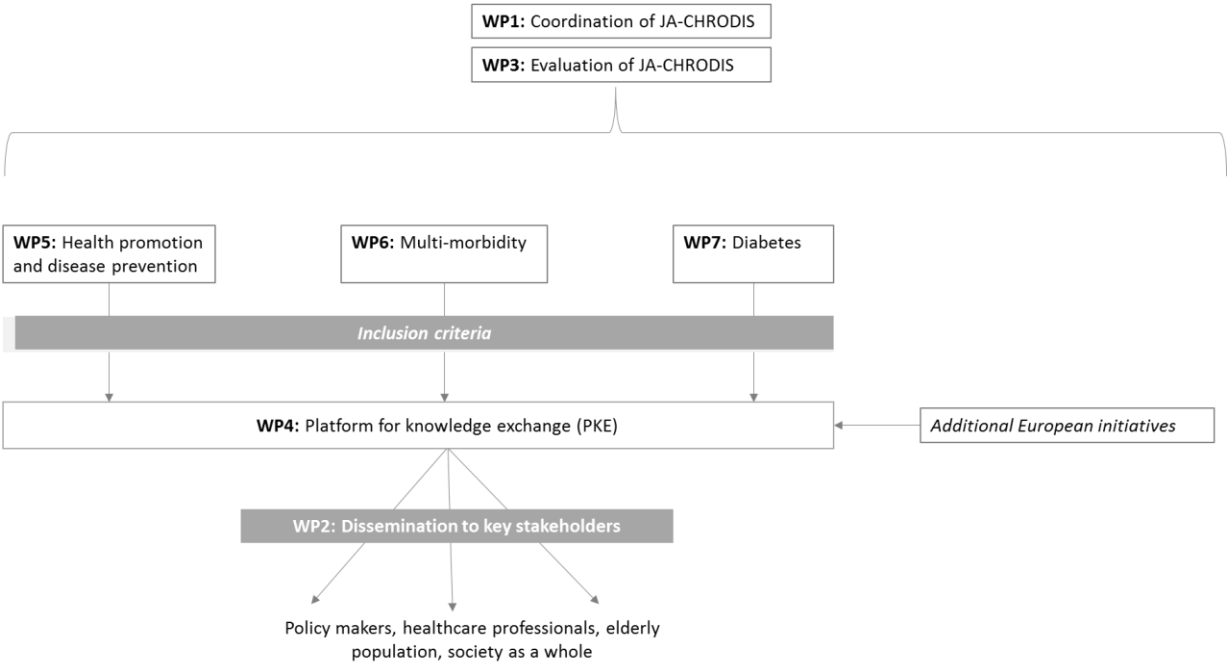
Table 90: Work packages within JA-CHRODIS

Work package	Description
WP1: Coordination	Coordinate the overall initiative, including relevant programs outside JA-CHRODIS, and ensure the initiative’s sustainability
WP2: Dissemination	Disseminate findings from activities undertaken within JA-CHRODIS
WP3: Evaluation	Evaluate activities undertaken at JA-CHRODIS to determine whether it has achieved its objectives
WP4: Platform for knowledge exchange	Implementing key JA-CHRODIS activities, that is, the platform where information on good

Work package	Description
	practices are pooled (i.e. repository of best practice principles)
WP5: Health promotion and disease prevention	To screen potential good practices for health promotion and disease prevention, with successful programs being made available to stakeholders
WP6: Multi-morbidity	Similar to WP5, however, related to practices regarding multi-morbidity
WP7: Diabetes	Similar to WP5, however, related to practices regarding diabetes

Source: (518)

Figure 158: Overview of JA-CHRODIS work packages



Source: (518)

Relevant to this task, is WP5: Health promotion and disease prevention. As outlined above, only those programs considered 'best practice' are included within the PKE. For the purpose of this initiative, JA-CHRODIS have termed best practice as:

'Not only a practice that is good, but a practice that has been proven to work well and produce good results, and is therefore recommended as a model. It is a successful experience, which has been tested and validated, in the broad sense, which has been repeated and deserves to be shared so that a greater number of people can adopt it.'(519)

Based on this definition, the following 10 criteria have been determined to select which health promotion and disease prevention models are included in the PKE:

1. Equity
2. Comprehensives of the intervention
3. Description of the practice
4. Ethical considerations
5. Evaluation
6. Empowerment and participation
7. Target population
8. Sustainability
9. Governance and project management
10. Potential of scalability and transferability (519).

Today, over 40 best practice models have been identified in regard to health promotion and disease prevention, which come from a range of countries including, Germany, the Netherlands, Ireland, Iceland, Greece, Norway and the UK (519). Best practice models take different approaches, however, in general, can be classified as either taking:

- A 'partnership approach', in which Departments/Ministries of Health are involved in developing and implementing health promotion and primary prevention policies and programmes, as well as non-governmental organisations.
- A 'Health in all Policies', as was used for the 10 Federal Health Targets in Austria (see section below).

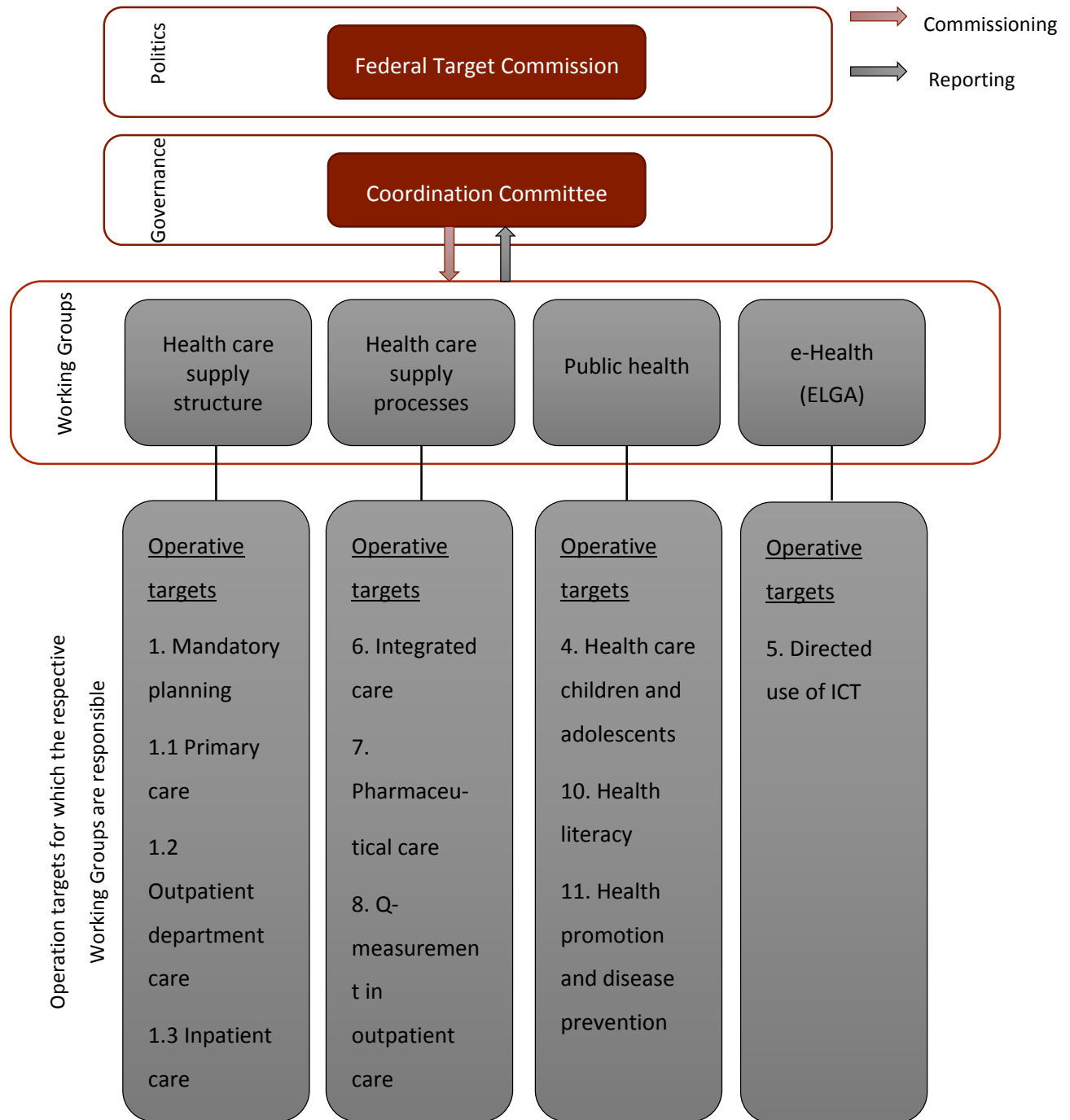
Austrian initiatives to address health promotion

In line with European efforts to strengthen health promotion and disease prevention, Austria too has implemented a range of initiatives, as evidenced by policies within the 2013 healthcare reform. Specifically, the latest reform introduced the Federal Health Target Agreement, and aligning Federal and State Target Control Commissions as part of Target Control health (*Zielsteuerung Gesundheit*). In addition to Target Control Health, 10 Federal Health Targets were introduced, which refer to the healthcare system more broadly (with the exception of Target 10, which is specific to the delivery of healthcare services).

Structure of the Public Health and Health Promotion Working Group

The concrete health strategies, operative targets, measures on a national and regional level, as well as ongoing projects, are specified in the Federal Health Target Agreement. The 2017 agreement outlines the reform agenda up until 2021 and was proposed by the Federal Target Control Commission to the Curiae. The operationalisation on the national level is carried out via Federal Annual Work Programmes (Bundes-Jahresarbeitsprogramm). As such, the Federal Health Target Agreement and the Federal Annual Work Programmes form the basis for the work and mandate for action for the working groups (Fachgruppen), including the working group on public health and health promotion. The Coordination Committee then assigns which targets and projects are covered by a specific group, as depicted in the figure below.

Figure 159: Organisational structure of the Federal Target Control Commission in 2017



Source: HVSV, 2017

As shown in the figure above, in 2017 there are four working groups that focus on specific topics, including structure of care delivery, delivery processes, public health and e-health. This constitutes a significant reduction from the number of working groups for the previous years, which amounted to six and encompassed the areas innovation, planning, financing and control, quality, public health and health promotion, and law. The responsibility of the working groups includes the set-up of project groups, although the final responsibility is with the Coordination Committee. For the years 2013 to 2016, two project groups were established under the Working Group on Public Health and Health Promotion. These include one group for the identification and development of a range of important indicators to measure public health parameters (Outcome-Messung), and a second group that looked into the quality of health communication. The new project groups for the period 2017-2021 are yet to be established.

These groups consist of four representatives each from the federal state, the regions and social insurance. This also constitutes a change to the previous group constellation, as efforts were made to have a uniform and balanced representation of stakeholders. The Curiae then choose the individuals who will participate in the working groups.

Financing of the undertakings by the Federal Annual Work Programmes (Maßnahmen des Zielsteuerungsvertrages) takes place on a project base via the individual Health Target Partners or via common resources made available by the Federal Health Agency (Bundesgesundheitsagentur).

Based on the initial workings of the organisational structure of the Federal Target health (Zielsteuerung Gesundheit), the new structure aimed to consider lessons learned. For instance, this includes a reduction of the working groups from six to four in order to make better cost-effective use of resources. Furthermore, in the past specific target measures were allocated to working groups, however, these could sometimes overlap in content, which in some cases made it difficult to differentiate tasks across groups. Consequently, under the new structure, working groups are allocated on the basis of operative targets and the responsibility for execution of the tasks is clearly defined. Furthermore, the topic child health has been included as an area of focus. These changes in the organisation of the working group, in order to make processes more efficient, constitute positive developments, which are to be tried and evaluated once the new structure is implemented in mid-2017.

7.2 Case and care management

7.2.1 Introduction to case management

Over the last two to three decades, case management has gained prominence in various health and social care systems within high-income countries. While the concept of case management originated in the 1970s in mental health care and the accident insurance industry, its expansion to other parts of health care can be explained by a number of trends. As cost pressures have increased in national health care systems due to factors such as population ageing, increasing patient expectations, and technological progress that expands treatment-eligible population groups, policy makers and payers have been looking for efficiency gains. With advances in biomedical science, health care has become increasingly specialised. As a result, medical research is now organised along disease-specific specialties and health care delivery according to mutually isolated provider organisations, for example, hospitals that are designed to cure acute illness. Such a system is not well suited for patients who receive care from various providers. These patients also tend to account for most of the cost in health care systems (see Figure 78). Policy makers, payers and providers have thus looked to case management as a means of coordinating service delivery and increasing efficiency.

At a high-level, efficiency is a ratio of output to input. In the context of health care, efficiency can be increased by improving health outcomes, while simultaneously maintaining or reducing costs. Given the difficulty in attributing changes in health outcomes to specific services, health care output is often expressed in terms of proxy measures, such as the volumes of services delivered.

Case management is, in principle, expected to contribute to efficiency gains by making services more appropriate and effective, and/or by reducing costs caused by duplication of efforts and delivery of unnecessary services. However, as will be discussed below, case management is in itself a time- and resource-intensive process that can add financial cost to the delivery of health care. To the extent that case management uncovers unmet medical need among patients, it can also increase the volume of health care services provided, leading to cost increases. The ultimate effect of case management on health care efficiency thus depends on whether positive effects can be achieved in terms of health outcomes and whether these effects at least outweigh effects on cost or, in other words, whether case management is a *cost-effective* intervention compared to alternatives.

The aim of this section of the report is to describe the international experience with case management, which is relevant to the Austrian context. It provides a brief overview of the academic literature on case

management, in health and social care in general and in rehabilitation and return-to-work (RTW) programs more specifically, and selected case studies from other European countries and North America.

7.2.2 Definition of case management

Health and social care literature

There are varying definitions of ‘case management’ in the health and social care literature depending on the field of application. Terms such as ‘care management’ ‘managed care’ or ‘comprehensive care’ have also been used in prior research to refer to similar concepts and indeed these different labels are often used loosely or interchangeably. However, across different studies and terminology, the consistent underlying concept of case management is the same. Case management makes the individual patient, rather than diseases, care providers or services, the basic unit of care delivery to ensure coordinated delivery of all services required by a patient, usually overseen by a professional who acts as ‘case manager’ (520–522). This process usually also involves a formal needs assessment and the creation of an individual care plan. Case management is often part of broader interventions that aim to improve the delivery or effectiveness of healthcare services (523,524).

The underlying idea of organising the delivery of modern, and often specialised, healthcare around comprehensive needs of individual patients has been traced back to the 1970s. In particular, in a seminal article on the division between psychiatry and biomedicine, Engel (525) suggested the ‘biopsychosocial model’ to avoid reducing the definition of disease to deviations from normal in biological variables and integrate social, psychological and behavioural factors. This model is often seen as the basis for a patient-centred and comprehensive delivery of health care.

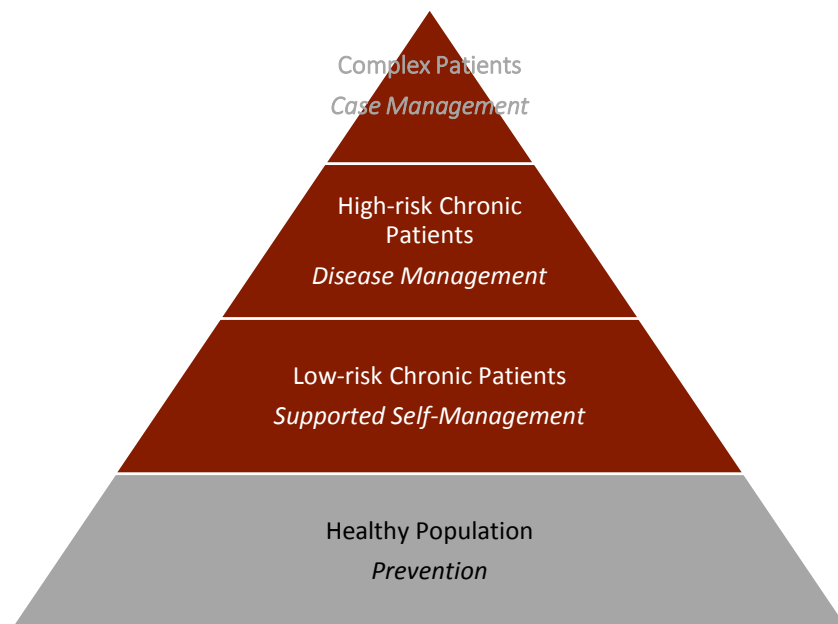
In more practical terms, case management evolved in parallel in different areas of application. For patients with chronic diseases, for instance, the ‘Chronic Care Model (CCM)’ was proposed in the 1990s and provided six core principles to move care from a fragmented and episode-based approach towards a coordinated process led by primary care (526,527). One of the six principles suggests that the care delivery system be redesigned to encourage better collaboration and work in multidisciplinary teams.¹⁰⁵ Principles

¹⁰⁵ The other five state, 1 – that healthcare systems should endorse improvement of chronic care overall by supporting improvement at all organizational levels and by providing the necessary structures and incentives; 2 – that clinical decision-making be supported by the adoption of evidence-based guidelines and protocols; 3 – that clinical information systems be used to collect, summarize and review individual or aggregate patient data to support providers and patients and to facilitate the smooth delivery of care; 4 – that patients and their families receive support in self-management to improve the confidence and skills of patients in managing the challenges of living with and treating their chronic illnesses; and 5 – that community resources be activated and integrated with health care to expand support for chronically ill patients and fill gaps in needed services.

of the CCM have been extended to patients who suffer from multiple chronic conditions (multi-morbidity) or a combination of various health problems that makes their care needs complex. In the literature on mental health and psychiatry, the use of the term case management dates back to the 1980s and has been used to refer to patient-specific delivery of mental health services, usually in community settings for patients with severe mental health illness (528–530).

Across health and social care services in general, case management is typically targeted at those patients who require support over long periods of time and whose care needs are complex. The ‘Kaiser Pyramid’ (see figure below), initially proposed by Kaiser Permanente, an integrated healthcare provider consortium in California, is a widely accepted conceptual framework suggesting that the delivery of care should be adapted to the level of patient complexity. As complexity increases, service provision moves from supported-self management for low-risk patients to disease management for high-risk patients and to case management for complex patients (531). Cases are considered complex when they require services from various providers, which increases the risk of fragmented care.

Figure 160: Kaiser Pyramid



Source: Adapted from Singh and Ham (531)

Rehabilitation and return-to-work interventions

Since the 1980s, case management has also appeared in occupational health literature and studies that examine rehabilitation and return-to-work (RTW) programs following injuries or absence from work, more generally (532–534). Case management has been introduced more recently in RTW programs in several OECD countries. In this context, case management typically aims to improve coordination between services of employment, services with health care, or services of social care providers with the overall goal of accelerating recovery and reintegration into the workforce. One institution usually provides the case management service to coordinate remaining services. Another common and important element of case management in RTW programs is a formal needs assessment and the definition of a plan, the execution of which is monitored and followed-up on by the case manager. The level of formality of the process and the intensity of support provided by case managers, however, can vary widely between countries and different models.

In Denmark for example, vocational rehabilitation is co-ordinated by the municipal job centre and involves health care services, social services and the education sector to prevent disability benefit claims (535). In co-operation with the mental health and welfare sectors, Flemish employment services in Belgium provide a ‘job coach’ who acts as case manager and provides not only support in the job search but also

coordination of services provided by a ‘mental health coach’ and an ‘empowerment coach’ from welfare (536).

Accelerating RTW should be a priority of social security systems given the two-way relationship between employment and health. While being healthy is a prerequisite for the ability to work productively, work can keep people healthy, further being out of work adversely affects physical and mental health. Evidence suggests that unemployment is associated with lower use of preventive and curative health services, which has an adverse impact on health outcomes (537,538). However, the positive impact of work is not present in poor quality, low paid and insecure employment (538). Unemployment, on the other hand, has been shown to increase mental distress and deteriorates mental health status through reduced social contact, a less defined social identity and through loss of structure in daily living (537). This suggests that cash payments and similar unemployment benefits are insufficient to preserve the health of people who are out of work and that services which integrate physical and mental health services with unemployment benefits are necessary.

7.2.3 Case management in the Austrian context and legislation

The 2008 agreement under article 15a of the Austrian federal constitution on organisation and financing of the health system (*Vereinbarung gemäß Artikel 15a B-VG über die Organisation und Finanzierung des Gesundheitswesens*) made patient-oriented coordination of financing and service provision by various insurers and health service providers an overriding goal of a comprehensive medical service for the Austrian population. However, similar to the international context, there is no single and universally accepted definition of case management in the legislation or other sources of rules governing the Austrian health and social care system.

A German monograph (539) has defined case management as, ‘a method tailored for individual cases that can be applied by various persons in diverse setting to realise patient focus and patient participation as well as outcome focus in complex and highly fragmented health and social care systems’ (p.8). This definition has also been adopted in a prior review of case management in Austria by Czypionka *et al.* (540), published by the HVSV. This paper positions case management as an approach to organise treatment for complex patients, as a complement to disease management, and breaks the process down into a cycle with six steps: 1 – identification of patients; 2 – assessment of psychosocial patient status and patient needs; 3 – definition of a care plan; 4 – implementation of the care plan overseen by a case manager; 5 – monitoring of service provision by a case manager; and 6 – patient discharge and evaluation of the care plan (540).

While legislation does not provide a definition of case management, laws governing health and social care and employment services refer to the term case management in the contexts of rehabilitation and RTW, maintaining the ability to work and long-term care. Case management is mentioned in the following three statutes.

In the context of rehabilitation and RTW, §143b of the General Law on Social Security (ASVG) establishes obligations of sickness funds, the public employment service and pension funds to provide case management to persons who receive a rehabilitation allowance. This group includes persons who are temporarily, but not permanently, unable to perform duties that are part of their occupation, irrespective of their employment status. Case management in this context comprises patient needs assessment, coordination of services and holistic support in rehabilitation to regain the ability to work. Patients face no OPP costs for case management services but are legally required to cooperate with service providers. The rehabilitation allowance may be withheld if patients are found not to cooperate. From 2017, the law also provides for part-time return to work according to a reintegration plan, if agreed upon between employers and employees. During the reintegration period, working hours are reduced to between 25 and 50% of a full-time commitment and the employers pay a proportionate share of the salary with the rest covered by health insurance.

Legislation establishes a clear hierarchy of responsibilities between insurers for costs related to rehabilitation measures. Costs for health care and RTW after workplace accidents and work-related illnesses are borne by accident insurance. Pension insurance bears costs of services to avoid early retirement or long-term care due to longer-term health problems. Health insurance bears supplementary responsibility for medical services to persons no longer entitled to pension insurance benefits.

The law also provides for an interdisciplinary patient assessment team established by pension insurance, in cooperation with health insurance funds and the public employment service. Where these assessments establish that full recovery for RTW is not possible, the insured person can be eligible to claim benefits for incapacity to work or disability subject to a number of conditions. In this case, the person is no longer eligible for case management to support RTW.

In the related context of maintaining the ability to work of employed and unemployed persons, §1 of the Law on Work and Health (AGG) provides for the use of case management in early interventions to address health problems.

In the context of long-term care, §3 of the Law on the Fund for Long-term Care provides for the use of multi-professional care teams and case management, including services that 1 – involve planning of social and long-term care based on individual needs assessments; 2 – organise needed care; and 3 – manage provider interfaces.

In Austria, there exist three prominent case management programs, namely Fit2Work, rehabilitation allowance, and Early Interventions. Brief case studies for each of these programs are provided below. For more detailed information, please see Volume 4 – Situational analysis.

Figure 161: Fit2Work

Services

Fit2Work is designed for individuals who, due to a health impairment (defined by §33a RRK 2005), may find it either difficult to find work (i.e. unemployed), or to maintain their current job. Those who are employed and covered by GKKs, will be invited to participate if they have been away from work, due to illness, for 40 days or more over the past year. Those who are unemployed due to ill-health are invited by the Public Employment Services. In 2016, approximately 60% of participants were unemployed. Ultimately, the decision to participate in the program lies with the targeted individual.

Fit2Work offers free of charge advisory/mentoring services, which can be broken down into the following five categories: 1) information phase; 2) the status-quo-survey; 3) the analysis and development of improvement measures; 4) the implementation phase; 5) and the evaluation-phase.

Funding

In 2012, the Austrian Federal Government developed and implemented the Fit2Work program, which is funded by Public Employment Service Austria (AMS), GKKs, PVA, AUVA, the Ministry of Labour, Social Affairs and Consumer Protection, and the European Social Fund*.

Legal provision

The Fit2Work program is based on the Austrian Work and Health Law (Federal Act on Providing Information, Advisory and Support Services in the Areas of Health and Work, AGG) (§33a RRK 2005).

Participation

As of December 2016, approximately 17,000 participated in Fit2Work, covering 680 companies. The majority (70%) of participants were between the age of 40-59 years, and the share of female

participants outweighed male clients, reaching 57%. The majority of disease diagnoses related to either psychological disorders (about 40%), or injuries and damages relating to the musculoskeletal system (also, about 40%).

Source: See Volume 4, as well as (541)

Note: *Part of the European Commission, which aims to support jobs, help individuals gain better jobs and ensure fairer, more equitable job opportunities.

Figure 162: Rehabilitation allowance

In the case where an insuree (below 50 years of age) has a health impairment that is not permanent, and therefore only temporarily unable to work for at least six months, the health insurance carrier will be required to pay a rehabilitation allowance.

Those who receive the rehabilitation allowance will be assigned a case manager who provides assistance to the individual until they have recovered. More specifically, the case manager, for example, will set individual health targets to either stabilise or improve the patient's health status. Services provided by the case manager are offered free or charge to individuals.

The rehabilitation allowance is paid monthly and total 60% of the individual's salary, with a floor reimbursement of €889.84 per month (figure as of 2017 for single persons pegged to the equalisation supplement).

After one year, the health insurance carrier will assess whether the individual the allowance should continue.

Source: See Volume 4

Figure 163: Early Interventions

Insurees who have been absent from work for more than 28 days* due to one of the diseases outlined with §33a RRK 2005, are invited to participate in the Early Interventions Program. In this instance, the relevant GKK is responsible for inviting the individual to engage in a voluntary consultation as a way to analyse their health impairment and healing progress (§34a RRK 2005). Consultations are

predominantly led by case managers, with the objective of informing the individual of existing prevention and rehabilitation measures, such as Fit2Work.

The overall aim of the program is to identify individuals who are likely to retire early due to ill-health and assist them with their recovery process to raise the actual retirement age.

Source: See Volume 4

Note: *Excluding time spent in hospital care, inpatient or ambulatory rehabilitation, measures for health promotion undertaken by the pension insurance institutions, or any other measures to strengthen the health, as well as time spent for medical measures of rehabilitation in the accident insurance institutions.

7.2.4 Summary of the evidence

Case management in health and social care

This section summarises prior literature on interventions that provide case management for various population target groups. Evidence on the effects of interventions that comprise case management has been synthesised in a number of recent literature reviews. Evidence reviewed in these studies comes predominantly from the United States, with some studies from Canada and only a very small number of studies from European countries, including the Netherlands, Norway, Italy and the United Kingdom.

Populations targeted

Recent literature reviews have synthesised the effects of interventions that comprise case management for the following patient target groups:

- Persons with *multi-morbidity*, defined as any combination of two or more chronic diseases, in reviews published since 2010 (542–545); including an authoritative Cochrane review published in 2016 (545)
- Persons who have combinations of *physical and mental health problems* in reviews published since 2010 (546–548)
- *Frail elderly* persons in reviews published between 2003 and 2004 (549,550)

- Persons who have *terminal illnesses* or *receive palliative care* in reviews published since 2013, including broad patient groups with any severe or advanced disease who no longer respond to curative or maintenance treatment (551–554) and cancer patients (555).

Patients have also been targeted based on patterns in their use of services. Interventions have been targeted, for example, at frequent or repeated users of hospital and emergency department services (556,557) or at the point where elderly patients transition between healthcare providers, in particular at hospital discharge to avoid readmission (558). Similar to other studies, evidence synthesised by these reviews was predominantly from the United States, but also included a small number of studies from the Netherlands and the United Kingdom.

Interventions and services delivered

Two literature reviews on multi-morbid patients focused on interventions that were delivered in primary care or comparable community-based settings (542,545) while two other reviews included care delivered in any setting (543,544). In addition to providing case management, these reviews studied interventions that included improved processes for cooperation between primary care physicians and other health care professionals (542,545), other additional patient support services (545) or services following any of the five other principles of the CCM (543,544).

One literature review on patients with a combination of physical and mental health problems focused on care that was delivered in a primary care or comparable community-based settings (547), while one included any coordinated and multidisciplinary model of care in any setting (548), and a third did not explicitly specify the provider setting but included only interventions that aimed to improve cooperation between primary care physicians and other health care professionals (546).

One of the two literature reviews on interventions for frail elderly persons focused on studies of case management by a case manager only, usually a specialist nurse responsible for case finding, assessment, care planning, implementation, coordination and monitoring of care to prevent fragmentation and to optimise patient-centred care delivery (549). The other review synthesised evidence on an intervention that included case management but took a broader approach to integration of services between providers of acute and long-term care (550).

Two of the five reviews of interventions for patients with terminal illness or receiving palliative care focused on interventions similar to case management, with one (551) evaluating the effect of care coordination involving a palliative care specialist across provider settings and the other one (552) the

effect of team-based palliative care interventions delivered in patient homes. The three other reviews (553–555) were broader and included any type of palliative care intervention, of which two (553,555) did not restrict the setting in which care was delivered and one (554) restricted the setting to outpatient non-hospice care. Palliative care was usually defined as any approach that improves the quality of life of patients and their families facing the problems associated with a life-threatening illness. This often includes case management and self-management but also components such as symptom management, education and patient activation.

The review of interventions for frequent health care users (557) synthesised evidence on the effect of quality improvements to care based on the CCM, including case management, changes to professional teams, promotion of self-management, provision of decision support, and better use of clinical information systems. Case management was included in interventions evaluated by 29 of 36 randomised controlled trials (RCTs) included in the review. The review of interventions for frequent emergency department users (556) included any kind of intervention aimed at reducing emergency department attendance, and seven of eleven studies included were on case management. The review of interventions to improve hospital discharges and avoid readmissions (558) included studies of the effect of nurse-assisted case management including elements such as frequent follow-up and home visits or patient education by specialised nurses, with some variation in the scope of the services provided.

Impact

The most recent of four reviews of interventions for multi-morbid patients concluded that evidence of the effect of such interventions was growing but was still limited and not of high quality (544,545). Overall, the reviews of interventions for patients with any combination of chronic diseases found insufficient evidence or no effect of interventions on mortality and clinical outcomes related to physical health (542–545); some improvements to measures of mental health status, such as depression symptoms (545); some improvements in measures of functional status (545); some improvements in patient satisfaction (542–544) some improvements to process-measures such as medication and guideline adherence (545); and inconsistent effects on health care utilization or cost, with two reviews finding some evidence of reductions (542,543) while the other two reported insufficient evidence or found no effect (544,545).

The 2016 Cochrane review also concluded that interventions with a more narrow focus, for example on management of the risk factors of co-morbidity, medication management or improvement of functional limitations and similar areas of difficulty, were more likely to be successful than broader interventions, such as those that provide case management for all types of multi-morbid patients (545). The Cochrane

review further concluded that interventions that are mainly patient-oriented and are not linked to changes in health care delivery are less likely to be successful (545).

Three reviews of interventions for persons with combinations of mental and physical health problems found no effects on mortality but some improvement in measures of mental health, such as depression symptoms, anxiety and mental health-related quality of life, and improvements in some measures of physical health status when targeting patients with specific chronic diseases, such as HbA1c levels in depressed patients with co-morbid diabetes or a short-term reduction in major adverse cardiac events (MACE) in patients with depression and co-morbid coronary heart disease (546–548). None of these three reviews reported effects in terms of process-related measures or utilisation. Only one review investigated economic endpoints but found no effect on costs (546).

The review of case management for frail elderly persons found limited evidence of effects on health outcomes, with no effect on mortality and functional status and only one original study that was included showing improvements in cognitive status, depression and activities of daily living (ADL) (559). Evidence of the effects on patient satisfaction and emergency department use was not conclusive and no effect was found on inpatient and outpatient hospital use (559).

The review of interventions to integrate acute and long-term care for frail elderly patients found inconclusive evidence of effectiveness in terms of health outcomes but found improvements in process measures, such as enhanced feeling of empowerment among patients, increased appropriateness in the use of community-based services and reduced utilisation in other parts of the healthcare systems, including emergency department visits, specialist consultations and inpatient hospital or nursing home stays (550).

The review that focused on coordination of care for patients with terminal illnesses concluded that there was moderate evidence that such interventions improved patient and caregiver satisfaction and a low level of evidence of improved quality of life and symptom control and reduced health care utilization (551). Effects in terms of cost were not reported (551). The review of home-based palliative care did report an increased likelihood of dying at home but remained inconclusive on effects in terms of health care utilisation and cost-effectiveness (552).

Two of the three reviews of broader palliative care interventions (553,554) found that palliative care is generally more effective than usual care at alleviating pain, distress or depression and can improve physical function, symptom control or quality of life. Palliative care also had a positive effect on patient

and caregiver satisfaction (553,554). Evidence on mortality is less conclusive but suggests that palliative care is at least equally as effective as usual health care near the end of life (553,554). These two reviews (553,554) also reported that palliative care can be a substitute for usual hospital services and reduces costs through increases in use of end of life care, and reductions in hospital admissions, readmissions, emergency department visits and lengths of stays in intensive care units. One review that only looked at the effect of palliative care on emergency department use (555) found no clear evidence of reductions and concluded that substitution patterns were dependent on the designs and availabilities of alternative services in each individual health system.

Interventions for frequent users of healthcare were found to reduce hospital admissions among patients with chronic conditions but not among those with mental illness and also to reduce emergency department attendance among elderly patients (557). The reviews also concluded that case management, changes to teams of health care professionals, promotion of self- management and patient education were effective intervention components to reduce hospital admissions but that these specific components were not associated with reductions in emergency department visits among elderly patients (557). Authors speculated that the absence of an effect for patients with mental health conditions may have been caused by the fact that most original studies included a coordination strategy in the care provided to the control groups. The review on interventions for frequent emergency department users concluded cautiously that such interventions may reduce emergency department use, but also that the quality of studies was limited and that regression to the mean may have biased non-randomised studies (only three of eleven studies included were RCTs) (556). Case management was associated with reduced emergency department costs and improved health outcomes; however, cost analyses did not always include costs of the intervention so that, overall, case management may be cost neutral (556). The review of nurse-assisted case management in hospital discharge found that the interventions could reduce hospital readmission rates and reduced lengths-of-stay in case of readmission within the first twelve months of discharge and, as a result, reduce cost, but only found this result in about half of the 15 trials reviewed (558). The review was inconclusive as to which elements of the interventions were associated with the reductions (558). Limited evidence was found that the interventions reduced emergency department visits and no effects in terms of mortality were found (558).

Case management in return-to-work interventions

This section summarises prior literature on interventions that provide case management to persons who are temporarily on sickness absence from work. Several recent literature reviews have synthesised

evidence on the effectiveness of rehabilitation or RTW interventions that include case management. Evidence reviewed in these studies comes from OECD countries, mainly in North America and Europe, and are less concentrated in the United States than on case management in health care for complex patients.

Populations Targeted

Evidence has been reviewed for persons on sickness absence in general, irrespective of their specific health problems or diagnoses, in two reviews published in 2012 (560,561). One (560) of the two reviews, however, also investigated whether interventions for persons on sickness absence due to specific diagnoses were more effective than broader ones. Other reviews investigated the effectiveness of RTW interventions for persons on sickness absence due to musculoskeletal problems (562), which was also published in 2012, and musculoskeletal or other pain-related conditions (563), published in 2005. Interventions reviewed in these literature reviews typically target employees in their first two to eight weeks of sickness absence.

The UK National Institute for Health and Clinical Excellence (NICE) published public health guidance in 2009 on the management of long-term sickness absence and incapacity for work, which was defined as absence lasting more than four weeks (538). No restriction is applied in terms of the reason for sickness absence. NICE guidance is based on a systematic review of evidence to underpin the recommendations.

Interventions and services delivered

One of the two reviews on persons on sickness absence in general, irrespective of their specific health problems or diagnoses (560), synthesised evidence on the effects of a broad range of interventions, including case management or other improvements to information exchange among service providers but also elements such as employee activation and counselling, physical therapy, support by occupational physicians and workplace improvements. The other review of a broad group of persons on sickness absence (561) focused more narrowly on 'RTW coordination', a process similar to case management and involving an assessment leading to an individual RTW plan implemented by a RTW coordinator or team who coordinates services and communication among involved stakeholders.

The review on persons on sickness absence due to musculoskeletal problems (562) synthesised evidence on the effects of any intervention delivered in a primary-care or workplace setting or conducted in collaboration with primary-care providers or employers with the aim of improving work-related outcomes (sickness absence, job loss, RTW). These included physical, psychological, social and environmental

interventions directed at the person, such as physical therapy, the work or workplace, such as ergonomic adaptations, or health care and other services, including case management.

The reviews on persons on sickness absence due to musculoskeletal or other pain-related conditions (563) included a broad range of workplace-based interventions that aimed at improving RTW outcomes, including disability management, education, organisational changes and case management.

NICE guidance provides evidence-based recommendations for any type of intervention that aims to prevent or reduce moves from short- to long-term sickness absence (including the prevention of recurring short-term sickness absence); reduce recurring long-term absence; and support people on long-term absence or those with on incapacity or similar benefits with returning to work. Case management provided by employers is an element of recommended RTW interventions, if an initial assessment of the person on sickness absence establishes that case management can be beneficial.

There are also literature reviews on RTW and rehabilitation interventions in general that make no explicit reference to case management or similar planning and coordination activities in service provision but include intervention elements such as personal exercise, counselling, education, psychological support or ergonomic adaptations (564,565).

Impact

One of the two reviews on persons on sickness absence in general, irrespective of their specific health problems or diagnoses (560), found that early- and multidisciplinary interventions are effective most of the time and that providing gradual exposure back to the workplace, such as progressively augmented work tasks or partial RTW, and making work-related adaptations, such as ergonomic improvements of furniture, were effective elements. Activating interventions that stimulate employees to RTW and interventions with a pre-determined schedule of activities were found effective for physical complaints (but not for psychological complaints). The review also found that broad interventions, not targeted to persons with specific diagnoses, show no positive effect. Evidence suggested that narrow interventions for specific diagnoses were more likely to be effective but were not always effective either.

The review on RTW coordination for persons on sickness absence irrespective of diagnosis (561) found moderate evidence that coordination resulted in small increases in the likelihood of RTW by disabled or sick-listed persons by the end of study follow-up, and associated small improvements in functional status and pain.

The review on interventions for persons on sickness absence due to musculoskeletal disorders (562) found that most types of interventions included in the review appeared to be effective in achieving RTW, avoiding job loss or reducing the length of sickness absence but that no type of intervention could clearly be identified as superior to others. No specific findings were reported on the effectiveness of case management in isolation. The review also found that effects were small and smaller in larger and higher-quality studies, suggesting publication bias. No evidence was found of significant net economic benefits.

The reviews of work-place based interventions on sickness absence due to musculoskeletal or other pain-related conditions (563) found that such interventions can reduce the duration of work disability and associated costs but found only weak evidence of effectiveness in terms of quality of life. The review found moderate evidence that case management reduced the duration of work disability and that this can also generate net cost savings within the first year of the intervention. It also found strong evidence that work disability duration was reduced by the presence of work accommodation officers and enhanced contact between health care providers and the workplace.

NICE guidance identified three main characteristics of interventions that were more likely to report positive results: early interventions, multidisciplinary approaches and interventions with a workplace component (566). Guidance recommends that employers or their designated occupational health specialists should make initial enquiries about reasons for the absence and to make a prognosis for RTW within two to six weeks of the start of the absence, and appoint a responsible case manager if necessary. If necessary, case managers are recommended to oversee a detailed assessment by specialists and produce a formal RTW plan that outlines the level, type and frequency of interventions and services needed. Such a plan can provide for gradual RTW in the original job or a return to partial duties. Finally, case managers are recommended to oversee delivery of the interventions, coordinate interactions with health care providers and other specialists and provide intensive support to people with a poor prognosis of RTW (538).

The reviews of RTW interventions that do not explicitly include case management generally found that interventions are effective when they are delivered early in the period of sickness absence, involve the workplace and are multidisciplinary (565,567).

Similar to reviews of interventions in healthcare for complex patients, most of these reviews conclude that evidence is of low or moderate quality.

7.2.5 International case studies: case management

The first three subsections of this section summarise experience in Denmark, the Netherlands and the United Kingdom with return-to-work policies in general and with case management as a component of such policies more specifically. The fourth subsection provides three case studies from the Netherlands, the United States and Spain to illustrate the use of case management for people with complex needs in health and social care.

Denmark: Broad return-to-work interventions

Since the early 2010s, Denmark has restricted access to disability benefits in favour of programs that aim directly at reintegrating people into the labour market and expanded responsibilities of municipalities for monitoring and assessing sickness benefit recipients. Employers have relatively limited responsibilities relative to other European countries and Danish municipalities, which now bear much of the financial burden of sickness absence, play a strong role in RTW. Municipalities also provide case management and multidisciplinary support for rehabilitation (568). Municipalities initially bear the costs related to such activities but receive reimbursement from the national government.

To incentivise municipalities to support people in RTW, reimbursement by the national government for people who are out of work have been reduced, especially for passive benefit payments (535). Municipal job centres are the single institution responsible all types of sickness absence and RTW benefits and all people regardless of insurance and employment status (535,569).

Denmark also maintains a flexible working scheme that provides significant wage subsidies for people with reduced work capacity, which encourages companies to employ people for fewer working hours or at lower productivity at full hours (535). The scheme was reformed in 2013 to improve targeting at people with limited work capacity and avoid attracting those who are fit for work to less demanding jobs while not reducing the number of disability benefit recipients (535,570). The reform also introduced multidisciplinary rehabilitation teams at municipal job centres (570).

Remaining weaknesses in RTW policies in Denmark are the insufficient systematic identification of people with mental health problems, who are overrepresented among the unemployed, and lack of support in RTW for such people (535). The varying levels of reimbursement of municipal costs by the national government may also lead to strategic behaviour by municipalities and allocation of beneficiaries to benefits that provide greater revenue to the municipality rather than those most suitable for the persons concerned (535).

The Netherlands: Return-to-work for people with mental health problems

Several policies have been introduced in the Netherlands to prevent long-term absence, disability and the potential permanent exit from labour markets. These policies have devolved government responsibilities to other stakeholders in the system, in particular employers but also employees, and have gone further than in many other countries in terms of legal obligations, financial incentives and potential sanctions (568). People with mental ill-health have been identified as a group with a particularly high risk of sickness absence from work (571,572).

Employers are required to appoint a prevention specialist and conduct several activities to identify, assess and address risk factors for sickness absence. They are also required to formulate a sickness management policy (573). In case of sickness absence, employers are required to continue paying 70 to 100% of the salary of the absent employee for two years and the employee cannot be laid-off. Within six weeks of the start date of the sickness absence, employees must see an occupational physician at expense of the employer (568). Occupational physicians are responsible by law for analysing workplace problems and producing return-to-work plans.

The provision of case management for return-to-work is also an obligation of employers, who are required to hire a case manager to oversee the return-to-work process. As is common in case management interventions, an action plan spelling out responsibilities in ensuring a quick return to work is part of the process, and has to be agreed upon between employer and employee within eight weeks of the start date of the sickness absence (568). Employers, often through the return-to-work case manager, monitor the return-to-work process and must record actions undertaken. Some companies also employ a social worker to provide support, in particular for those with psychosocial problems that impact their ability to work. The Employee Insurance Agency (UWV) may penalise employers and employees for not collaborating in the return-to-work process.

In case return to work is not possible, despite adjustments to the job by the employers, both the employer and employee are obliged to look for suitable work for the worker in another company. This is supported by public occupational health services, reintegration offices, and employer branch organisations (568).

It is not entirely clear how successful these policies have been. Compliance by employers with their obligations has been reported to be low, especially but not only among small companies (573). For example, fifty percent of employers have been found not to maintain guidelines for employees on when occupational physicians should be contacted in case of sickness absence and some twenty percent of

employers have been found not to meet their obligations related to sickness absences longer than two years (568). Although the independence of occupational physicians from treating physicians avoids conflicts of interest of the latter in sickness certification, the obligation of employers to fund consultations with occupational physicians has in turn raised concerns about their neutrality between employers and employees and assertions that these physicians primarily defend interests of employers (568). Sickness absence rates in the Netherlands have decreased since the 1990s and are now close to the OECD average (574). However, they remain high among people suffering from mental ill-health (568).

The lack of integration between mental health services and employment support is also a challenge. A more recent reform aimed at decentralising government responsibilities to reduce the fragmentation of services, including mental health, long-term care and employment support, and placing responsibility with municipalities (573). Fit-4-Work is an example of an initiative for people with multiple psychosocial problems who are not part of the labour market to achieve integration of services provided by social services, the UWV and the mental health care sector and accelerate return to sustainable employment (573). Services are provided by a multidisciplinary team in an individually tailored approach. The initiative was introduced in 2012 in five large municipalities and found to be effective in achieving return to work in a two-year randomised control trial (575).¹⁰⁶

Another problem with policies relying on employers is that they do not support people with no permanent employment contract who do not have a work place to return to (568,576).

United Kingdom: Early intervention and focus on fitness for work

The relationships between employment and health has been recognised in the United Kingdom with policies aimed at gradually improving integration of employment and health services. Similar to other countries, reforms have included restriction of the disability benefits system, efforts to identify and address work barriers early and to increase take-up of employment services by claimants of disability benefits (577).

The United Kingdom has also aimed to transform the role of general practitioners (GPs) in improving work-related outcomes by acting as gatekeepers to benefits and supporting patients in RTW. A policy was introduced in 2010 that requires GPs to provide statements of fitness for work (also referred to as the “fit

¹⁰⁶ At the time of writing of this report, detailed results of the RCT evaluating Fit-4-Work in the Netherlands were not publicly available.

note”) instead of the previous medical statement (“sick note”) (578,579). In this process, GPs must describe the work patients who request sick leave can still do despite their health problems but go beyond certifying fitness and also take steps to help patients return to work earlier. Patients can be certified fit at various levels and GPs can request a phased return to work, amended duties, altered hours or workplace adaptations. Similar initiatives to refocus certification for sickness absence towards fitness for work have been implemented in Denmark, Sweden and Switzerland (568).

An initial survey-based evaluation of the UK fit notes found that a majority of respondents considered the process helpful in discussing necessary changes with their employers and reported that the fit note had a positive impact on employers’ willingness to make changes (578). However, many fit notes were for short-term absences, stated that the patient was ‘not fit for work’ and did not recommend changes. Further, nearly half of respondents did not discuss changes with their employer (578,579).

In Scotland, the Early Access to Support for You (EASY) model was piloted with 11,000 staff of National Health Service (NHS) hospitals between 2008 and 2011 (580). The model provided RTW support and monitoring very early in sickness absence, from the first day, including case management by occupational nurses. Staff satisfaction with the service was high and sickness absence rates declined following the implementation (580). However, the pilot was conducted in the area with the highest absence rates in Scotland prior to the intervention, so that reductions could be related to regression to the mean, and declines followed similar trends to those the Scottish NHS in general so these effects cannot be clearly attributed to the intervention. A similar intervention, based on intensive case management by occupational health staff but focussing on staff who were absent for at least four weeks, was implemented in 2009 at an NHS hospital in Southampton in England (Return2Health - R2H) (581). The evaluation found a reduction in the rate of sickness absences that continued beyond eight weeks versus a control hospital but the methods used were also unable to attribute the effect to the intervention (581).

The Fit for Work Service (FFWS) program was piloted in England, Wales, and Scotland between 2010 and 2013. Its aim was to provide early-stage return-to-work support overseen by a case manager to reduce the drift into welfare benefits, including occupational assessments and multidisciplinary telephone advice. However, this program had difficulties in reaching the target group of employees at an early stage of sick leave, especially in the first year of operation. Initially, people who were still employed used the service most frequently. Among participants who were out of work, less than one-third had been off work for four to twelve weeks, which was the target group (568,582).

Permanent Fit for Work and national independent health and work advice and referral services have been implemented since 2014, based on best practices that were identified in the pilots (582). These services provide a work-focused biopsychosocial assessment to employees early in sickness absence, in addition it offers advice to employers and employees on needs for rehabilitation and RTW support for workers on sick leave and those still at work. It thus integrates advice to employers, particularly for small- and medium sized enterprises (SMEs), which were previously provided by the Occupational Health Advice Service (568).

Case management in health and social care for patients with complex needs

As previously discussed, case management has been widely applied to improve the delivery of health and social care for complex patients, who require services from various providers and whose care is at a particularly high risk of fragmentation. Between 2014 and 2016, LSE Health and the Commonwealth Fund, a private healthcare research foundation, led an international experts working group to identify good practices and innovative models of care delivery in care for patients with complex needs (583).

While not all of the models identified in this project have been rigorously evaluated in terms of effectiveness and cost-effectiveness, they share a number of features. For example, they commonly use routine data, from sources such as electronic health records (EHRs) or insurance claims, to target patients most suitable for the intervention; they also use information systems, such as shared EHRs, to facilitate communication between different professionals and providers involved in the process of care; they provide case management across all types of services, including physical and mental health care as well as social care, and usually embed case managers with primary care provider organisations; they support informal caregivers; and they make ensure that financial incentives for providers are aligned with the goals of the model. Figure 164 presents a case study of innovative models of care delivery for this patient group in Valencia, Spain.

Figure 164: Integrated Care Model for Complex Cases and Strategy for Chronic Care in the Valencia region, Spain

Background: An evaluation of home care in Valencia conducted in 2005/06 identified fragmentation of care between different health care providers and barriers between the health and social sector for patients with advanced chronic diseases or in need of palliative care, a complex group associated with high level of need and use of resources. An initial pilot to integrate health care for complex patients was conducted between 2007 and 2010 and scaled-up subsequently. In parallel, policies were developed nationally and in the Valencia region to respond to an aging population and the rising prevalence of chronic disease and reorient the health care provision from acute episodes to chronic disease management. More recently, the Valencia region launched a comprehensive Strategy for Chronic Care, comprising an Integrated Care Model for Complex Cases and based on earlier experience.

Objective: To improve care for complex chronic patients with multi-morbidity or in need of palliative care.

Year established: Piloted from 2007 to 2010, with gradual scale-up from 2011. The wider Chronic Care Strategy was launched in 2014.

Target group: The Integrated Care Model for Complex Cases targets patients at the apex of the Kaiser pyramid in need of complex chronic or palliative care. Electronic medical records (EMRs) are used to stratify the population monthly into “Clinical Risk Groups” (CRG) and identify high-risk patients. EMRs cover approximately 4.7M people of an entire population of 5M in the Valencia region.

Number of people enrolled: The model of care integration has been gradually expanded to cover approximately 1.2M patients in 2015 (26% of the population). Approximately 2.8% of general population covered are identified as “complex cases” using CRG, including palliative and multi-morbid patients.

Profile of patients enrolled: Complex cases are typically characterized by: age 75 or older; presence of chronic complex multi-morbidity or in need of palliative care; polypharmacy; high use of hospital resources; use of assistive and vital technologies; functional dependencies; fragile family, low capacity for self-care, adverse social or economic circumstances and high frequency of changes in clinical or nonclinical conditions.

Key model features and main intervention(s): The Strategy integrates hospital, primary and community-based health services, including hospital-at-home units and social workers, under a single management in each of the 24 health departments of the region. Social care, which is financed separately, is not formally integrated.

Newly introduced hospital nurse case managers (HNCM) and community nurse care manager (CNCM) have joint responsibility for complex cases. HNCMs identify complex cases at hospitals and are responsible for planning hospital discharge to ensure continuity of care. CNCMs are responsible for mobilizing the collaborative care process in the community and for arranging care at home. This process starts with a comprehensive assessment of the “case” (patient, informal carers and the environment) by a CNCM. The assessment is shared with a multidisciplinary primary care team (GP, nurses and social workers) to draft a care plan adapted to patient and family beliefs and preferences and including a medication review. Depending on the clinical and social complexity and acuity of the case, different resources, such as hospital-at-home, and other professionals are activated. Primary care physicians and their teams lead implementation of the plan with CNCM support. Both nurse care managers remain jointly responsible for monitoring the patient, interacting with multiple professionals and teams involved in the plan, ensuring appropriateness of care and continuity during transitions.

HNCMs and CNCMs attend 100 hours of specific training and a month of on-the-job training as pre-requisite to start working as case manager. Other professionals receive ongoing training related to care integration for complex cases.

Financing and payment methods: The Strategy is financed by the region of Valencia through its ordinary health care budget. All providers are paid as usual and staff, including nurse case managers, are salaried. There are no financial incentives for providers or staff specific to the Strategy or the Care Model for Complex Cases.

Information systems: An information system was implemented in the whole Valencia region in parallel to the Strategy. Each patient has a unique identifier and care providers, mainly in primary care, use the system in their daily practice to share patient information through electronic medical records (EMR). Data generated by hospitals is in the process of being integrated. The system is also used for stratifying the population and monitoring their conditions and drug use.

Evaluation methods: The model was not formally evaluated in terms of effectiveness or cost-effectiveness. The Valencia Regional Health Ministry monitors process measures related to scale-up of the project and health care utilization.

Evaluation results: Reduced unmet need through pro-active identification of complex cases, improved continuity of care, reduced emergency department visits and hospital admissions.

Source: Author based on personal communications with Juan Gallud; Barbabella *et al.* (584); Gallud *et al.* (585)

7.2.6 State of the evidence

In general, however, the evidence on the effectiveness of case management in improving outcomes and reducing costs remains weak. Furthermore, existing evidence also has to be interpreted with caution for a number of reasons.

First, available evidence is often of poor quality. Rigorous methods, such as RCTs, are difficult to employ in evaluations of complex interventions. Reasons for this include, but are not limited to, the inability to conceal intervention versus control group allocation from patients and professionals, spill-overs or ‘contamination’ of intervention and control groups when services in both are delivered by the same provider organisations or professionals, poor protocol adherence, the effects of professional behaviour and local contexts on outcomes that are difficult to control for, or ethical and political reservations around having control groups and not providing an improved intervention to all patients.

Second, evidence is difficult to synthesise, interpret and to generalise to other settings or countries because interventions that include case management are often designed in unique local contexts and are heterogeneous across original studies. Control groups often receive ‘usual care’, which also varies significantly between countries; for examples, the roles and responsibilities of specific health care professionals involved in providing usual care are not the same between countries. Most of the evidence is from the United States and only a small number of studies are available from Europe or other OECD member countries. This is a particular problem in applying evidence from the academic literature to the Austrian context because the United States health system relies on a mix of different private and public insurance and provider schemes and has, at the macro-level, little in common with Austrian social insurance and corporatist provider representation.

Third, case management is usually part of broader interventions designed to improve health care or health outcomes so that effects cannot be easily attributed to case management *per se* but, at best, to the entire intervention.

These limitations of study quality and the evidence notwithstanding, recent literature reviews of the effectiveness of interventions for complex patients that include case management have generally concluded that case management has no effect on mortality and little to no effect on outcomes related to physical health. They have, however, found some evidence of positive effects on mental health status, functional status, patient satisfaction or process-related measures such as adherence to medication regimens and treatment guideline. Evidence of effects on health care utilisation or cost is even more limited and generally not conclusive, with some studies reporting savings and other studies no effects or increases.

Evidence also indicates that interventions that include case management can be effective in specific subgroups of complex patients and when designed specifically for such subgroups. The 2016 Cochrane review of primary care-based interventions for multi-morbid patients, for example, concluded that narrow interventions were more likely to be successful than broader ones (545). The body of evidence on case management in palliative care for patients with terminal illness is larger than for other patient subgroups and suggests that such interventions improve quality of life and symptom control, patient and caregiver satisfaction and can also reduce costs through reducing utilisation of curative care that may have limited effect near the end of life. Evidence also suggests that such interventions are at least equally as effective as usual health care near the end of life in terms of survival. Finally, studies of interventions that provide case management for patients who are frequent users of health hospital services or emergency rooms and aim to improve transitions between provider settings and care post-hospital discharge suggest that such interventions reduce utilisation and cost and can also improve health outcomes.

Literature summarising the evidence on the effectiveness of case management in RTW interventions shows that case management, or, more generally, a formal assessment of the person out of work and personalised RTW plan, is a component of interventions that have a positive effect on work-related outcomes. Although the evidence shows that the effects achieved are small in magnitude, these studies also suggest cautiously that such interventions can be cost saving by offsetting costs of the service with accelerated return to work or increased employee productivity. Similar to health care for complex patient, case management it is usually part of broader RTW interventions and so that the effect cannot be easily attributed to case management *per se* based on these studies. Evidence shows that such RTW

interventions are more likely to be successful when they are provided early in the period of sickness absence, involve the workplace through elements such as improved communication between employers and care providers or adaptations to the workplace and are comprehensive in their service coverage and multidisciplinary. Successful interventions for persons on sickness absence due to musculoskeletal problems also include increased physical activity.

Evidence from the three case studies of case management in RTW interventions suggest that case management on its own may have limited effectiveness in terms of accelerating RTW or achieving sustained employment, especially when it is not targeted at and tailored for specific sub-groups of people who are out of work.

It also needs to be pointed out that, based on the current state of research described above, policy makers should not expect quick and straight-forward efficiency gains from case management. Rather, case management can provide a means of improving the process of care, is likely to improve satisfaction of beneficiaries and can achieve some improvements in health status or employment outcomes if provided to those people with the highest need. Particularly in the short term, however, it is also likely to require additional investments for providing the case management service and, in the longer term, a sustained effort in changing established and provider-specific structures in care delivery. Although the evidence on the effects of case management on healthcare costs is largely inconclusive as of yet, if targeted and executed appropriately, case management has the potential to reduce duplication and use of inappropriate services and can, together with improving the process of care or health outcomes, lead to efficiency gains. Such effects, can likely only be achieved in the longer run. This could also be a reason why many studies, that often use relatively short follow-up times of six to 24 months, do not find cost savings. Also, when case management is genuinely and proactively targeted at the patients with the highest need, interventions can uncover unmet need, which might lead to additional health care utilisation and cost increases.

7.2.7 Policy options: Case management

There are several general implications for the Austrian health and social care system that can be drawn from the international experience. These can be summarised as:

1. Target case management and other types of coordinated care based on need
2. Pilot new models, evaluate pilots rigorously and scale up successful ones
3. Increase organisational and financial integration of providers

4. Ensure comprehensiveness of the range of services covered by case management
5. Include inter-disciplinary cooperation in education and training programs of professionals
6. Continue strengthening the role of primary care and embed case management in primary care
7. Provide workplace and return-to-work interventions early
8. Embed case management in broad return-to-work interventions

Principles 1 through 5 apply to case management in general, regardless of whether it is used in health care for complex patients or by employment services to support rehabilitation and RTW. Principle 6 applies to case management for complex patients in health care only. The remaining principles apply to rehabilitation and RTW programs only.

For complex patients, the LSE Health and Commonwealth Fund International Experts Working Group on Patients with Complex Conditions provided a set of ten guiding principles (583), one of which is care coordination. These ten principles are also relevant for Austria.

It is also important to stress that the evidence clearly shows that success or failure of a given complex intervention that includes case management is highly context-dependent. Policy makers should therefore avoid copying successful models from other countries. Designing interventions specifically for the local context while taking into account factors for failure and success elsewhere and following some guiding principles is a preferable approach. Therefore, these principles are relatively broad and do not provide ready-made solutions that can be implemented easily.

Target case management and other types of coordinated care based on need

Case management should be targeted at persons with the highest need who are most likely to benefit from such a service. Targeting according to need can increase equity and also efficiency of services, because evidence indicates that targeted case management interventions are more likely to be successful than broader ones. Although the agreement under article 15a of the Austrian federal constitution on organisation and financing of the health system provides a broad obligation for stakeholders in the health and social cares system to improve patient-orientation and service coordination, current legislation on specific applications of case management takes an entitlement-based approach and defines case management as an insurance benefit for specific groups of insured persons. In particular, case management is mentioned in the contexts of services provided to persons, who are temporarily out of work and are eligible for rehabilitation allowance, employees who have health problems at work and for beneficiaries of long-term care insurance. Specifically, in the context of rehabilitation, the entitlement-

based approach linked to the rehabilitation allowance, for example, implies that persons whose health status is too poor to be considered able to regain working capacity may not receive beneficial services. More generally, there is an inherent risk in this entitlement-based approach that other population groups who might also be amenable to case management, such as people with mental health problems, multi-morbid or other groups of complex patients, or the long-term unemployed and permanently disabled, are not prioritised as target groups. Evidence also suggests that targeted case management interventions are more likely to be successful than broader ones. Persons who can benefit from case management should be identified in a holistic and needs-based approach, using person-specific information on health status or service use, rather than *a priori* based on insurance status or the responsibilities of individual insurers.

Generally, persons can be selected for case management, or other interventions, through screening, professional judgment or data-based algorithms. Each method of targeting has advantages and disadvantages and the selection of methods can influence the effectiveness of the intervention and equity in the distribution of services. Screening can achieve broad population coverage but might be impractical and expensive. Data-based algorithms offer an objective means of patient selection and equitable service distribution but are constrained by quality and availability of data. Professional judgment, on the other hand, can be more nuanced than data-based selection but is more likely to introduce bias and may lead to decisions in service provision that are based on factors other than need. However, data-based methods and clinical judgment can be combined sequentially to achieve a balance, for example, through automated analysis of patient-level data as a first step and subsequent decisions by professionals. Sources of routine data, such as claims databases maintained by insurers or EHRs (*Elektronische Gesundheitsakte – ELGA*), should be used where possible for the purpose of targeting case management.

In addition to targeting case management to patients with the highest and most complex needs, other types of coordinated care delivery should be provided to appropriate population groups, as suggested by the Kaiser Pyramid. This can include continued roll-out of disease management programs, which have been shown to be successful for patients with lower complexity (586) but are not suitable for complex patients. It should also be noted that case management is not the only appropriate approach to care for patients with complex needs. Rather, case management is usually provided in combination with other changes to health care delivery and there may be a range of suitable interventions. The Cochrane Effective Practice and Organisation of Care (EPOC) research group, for example, provides a recent and general taxonomy of ‘interventions designed to improve professional practice and the delivery of effective health services’ (524). The EPOC group distinguishes between four domains, ‘delivery arrangements’, ‘financial

arrangements’, ‘governance arrangements’ and ‘implementation strategies’, and provides a number of categories in each of them. The category, ‘coordination of care and management of care processes’ in the domain of delivery arrangements includes case management.

This principle of targeting should also apply to case management provided by employment services with the goal of accelerating rehabilitation and RTW. Persons can be targeted based on different criteria than for case management of complex cases in health care, but case management should also be provided to those persons who can benefit most. Broad RTW interventions that provide the same service to all persons on sickness absence are less likely to be effective in terms of RTW than targeted services that can provide more intensive support to a narrower group of beneficiaries.

Particularly in RTW programs where beneficiaries might not always have a regular contact with service providers in health or social care, persons who are most amenable to case management might often be difficult to reach. Achieving high enrolment rates among the target population, has, for example, been found to be a significant problem in the Austrian Fit2Work program (568). This requires engaging in active outreach in addition to making services available to the appropriate target group.

Pilot new models, evaluate pilots rigorously and scale up successful ones

Given the limited evidence on the effectiveness of case management and the dependence on context, models should be piloted and accompanied by rigorous evaluations. They can be adjusted subsequently to reflect insights from early evaluations, retaining successful elements, and scaled up gradually. Policy should avoid funding isolated pilot projects without addressing follow-on incentives or requirements that lead to adoption of successful models and the discontinuation or redesign of unsuccessful ones. The German Innovation Fund (*Innovationsfonds*) provides a useful example of how policy can encourage such an approach (587). Innovative models are selected to receive financial support by a central committee based on a funding application and a formal evaluation is required. Successful programs are required by law to be scaled up throughout the country.

Increase organisational and financial integration of providers

Linked to the first point on combining case management with other changes to the delivery of health care, policy should aim to achieve greater integration in the organisation and financing of the Austrian health and social care system. Continued fragmentation is likely to present an obstacle to coordinated care for complex patients, including case management that comprises services from all sectors of the system (588). In particular, separate financing streams for hospitals, office-based primary and specialist care and

social care services are not conducive to coordinated or integrated service delivery and provide no incentive for clinically meaningful substitution between services, for instance between hospitals and primary care providers. Also, the large number of separate insurers and corporatist stakeholders in the system have been identified as a barrier to a more strategic approach to integration and quicker take-up of initiatives at the state-level (588).

International experience with case management for complex patients indicates that financial incentives that encourage coordination are a necessary, but in and of themselves an insufficient, condition for providers to adopt coordinated approaches to care. This includes compensating professionals who take on the role of case managers, such as primary care nurses or physicians, for the time spent with patient assessment, planning and execution of care plans, and removing fee-for-service payments in favour of pooled budgets across different provider settings that incentivise the provision of services in the appropriate setting. In the Netherlands, for example, there are bundled payments for chronic care, which comprise prevention, early detection, treatment and rehabilitation (588). The lack of financial incentives has been identified as a barrier to success of prior case management programs in Austria, which were funded from the state health funds introduced in 2005 (540,588).

Ensure comprehensiveness of the range of services covered by case management

Efforts to integrate care for complex patients need to take a genuinely comprehensive approach and do not 'carve out' specific services. In some countries, this has in the past often been the case with mental health or social care, which may be subject to separate financing mechanisms and constraints from physical health care or separated as a result of organisational and cultural barriers. Although mental health care is funded through the same arrangements as physical health care in many OECD countries (589), it is often less prominent in policy debates and considered to be a field of medicine that is distinct from physical health. However, mental and physical health are strongly interrelated. Mental health problems frequently co-occur with physical illnesses and both types of illnesses may have mutually compounding effects. Moreover, people with mental health problems often receive poor care for their physical health needs. As a result, mental health patients have significantly higher mortality and morbidity related to physical health (590–594). For patients with complex needs, who, by definition, include a high number of people with a combination of physical and mental health problems, care for mental health needs to be integrated with physical health.

The principle of comprehensiveness should also apply to case management provided by employment services with the goal of accelerating rehabilitation and RTW. Contrary to case management for complex

patients in primary care, case management for people who are temporarily unfit to work is often provided by public employment services in other countries. However, even if the case management service is provided by employment service or disability insurance, it should cover the full range of health and social care services required to address all personal needs in the rehabilitation process. This can help prevent jobseekers with health problems from slipping into reliance on longer-term disability or pension benefits. It also requires integration in the funding of various services to avoid shifting beneficiaries between benefit schemes, which is costly and unproductive for society and the person concerned.

Include inter-disciplinary cooperation in education and training programs of professionals

Effective case management requires that professionals who take on case management responsibilities are adequately trained and that, more broadly, education for all professions involved in delivering health and social includes principles of interdisciplinary cooperation. Many prior examples of case management have relied on nurses to provide such services, because they already possess sufficient knowledge of clinical care and the health care system and can be trained relatively easily to act as strong coordinators of services provided by other health professionals. This does not necessarily imply that case managers have to be qualified nurses. However, successful models from other countries, such as those described in the case studies, usually establish formal job profiles for case managers and include training elements for case managers as well as other professionals involved.

Continue strengthening the role of primary care and embed case management in primary care

Coordination of care delivery should go beyond disease management that is implemented on top of current structures and aim to genuinely change existing structures in the delivery of care, particularly in the outpatient sector and in bridging in- and outpatient care. Evidence and the case studies reviewed in this section of the report indicate that interventions often suffer from insufficient take-up or poor protocol adherence by providers. It is therefore important that case management, and other forms of care coordination, becomes an integral part of care delivery. This includes a continued effort to strengthen the role of primary care, encouraging multi-disciplinary primary care teams and moving away from the traditional model of the individual family physician practice and placing greater responsibility for the entire process of care with primary care providers.

The responsibility for case management of complex patients should be placed within primary care. Experience from Germany and the United States suggests that case management and similar forms of care coordination provided by health insurers, often through remote coordinators, are not successful in

improving care or outcomes for complex patients. If provided by a single insurer, such case management programs run the risk of focusing only on the services paid by the specific insurer rather than a comprehensive range based on patient need and can add an additional layer of complexity to service delivery. On the contrary, case management can be more effective when case managers are embedded in provider organisations, in particular in primary care. Approaches that place case managers with insurance funds may thus not be the preferred approach. Rather, insurers could provide payments that provide appropriate incentives to primary care providers who take on the responsibility of case management. Although some prior examples of case management in the Austrian health and social care system (540) have focused on patient groups that can likely benefit, such as complex patients discharged from hospital, greater efforts should be made to identify and target the patients with the highest need proactively and embed case management in provider organisations rather than with insurers.

Provide workplace and return-to-work interventions early

Programs to reduce sickness absence should not only include reactive RTW programs, but be integrated into the work place and comprise preventive components, in particular for high-risk groups, such as employees with mental health problems. For people already on sickness absence, the probability of RTW is high early during sickness absence. Although there is no universal and precise definition in the literature of 'early' in terms of days, weeks or months (538), interventions should target such persons in the first few weeks of absence. Guidance by the UK NICE recommends that, if considered appropriate for the person based on an initial assessment, a case manager be appointed within the first two to six weeks of sickness absence (538).

Embed case management in broad return-to-work interventions

There is no evidence that case management on its own improves work-related outcomes in RTW interventions. Rather, case management can be an element of successful interventions but these should also address a range of needs that cannot be addressed by improving the coordination of existing services. When provided by insurers, RTW programs should actively involve the employer and the workplace, for instance through adapting working conditions to allow for earlier RTW or permitting a phased RTW, and provide a range of needs-based support to persons on sickness absence, such as exercise for persons with musculoskeletal conditions or counselling for persons with mental health problems.

Legal considerations

No particular constitutional impediments have to be faced with respect to these options, but some legal amendments would be required.

8 Additional efficiency potentials

Chapter 8 outlines additional ways to improve efficiency within healthcare systems. Specifically, this chapter explores issues related to administrative costs, healthcare fraud and business processes.

8.1 Typologies of waste in healthcare systems

Berwick and Hackbarth (2012) identified six categories of waste in the healthcare system – failures of care delivery, failures of care coordination, overtreatment, pricing failures, fraud and abuse, and lastly, administrative complexity (see Table 91) (595).

Table 91: Forms of waste within healthcare systems (Berwick and Hackbarth, 2012)

Form of waste	Description
Care delivery failure	Poor delivery of healthcare services that fail to maximise patient outcomes with given resources
Care coordination failure	Failure to coordinate patient care across relevant healthcare providers within all levels of the system
Overtreatment	Provision of unnecessary services
Pricing failures	Where prices deviate from those expected within ‘well-functioning markets’
Administrative complexity	Inefficient processes that led to unnecessary administrative tasks
Fraud	Costs caused by those who intentionally abuse the system for their own gain

Source: (595)

This report has previously discussed waste regarding care delivery (for example, see section 3.5), care coordination (for example, section 6.1) and overtreatment (for example, see section 3.5). This chapter explores two outstanding forms of waste, namely administrative costs, and healthcare fraud. For each

category of waste, the financial cost in Austria has been compared with similar countries. Based on these findings, a range of policy options have been developed to further reduce waste in the healthcare system.

8.2 Administration costs

Administrative costs within the healthcare system represent funds spent on activities not directly targeted at improving health outcomes (596). At the health insurance level, administration costs can include claims processing, planning, management, regulation and collection of funds (596).

A relatively high proportion of healthcare costs consumed by administrative tasks is viewed as wasteful, and is therefore often the first component governments/payers try to cut (597). Such treatment of administrative costs should be approached with caution, given administration represents a core element of running any healthcare system. Further, additional administration is often required to meet new policy objectives targeted at measuring health performance. Therefore, higher administration costs can in fact assist improvements in healthcare quality (597). For example, P4P schemes involve additional data collection, reporting and analysis, and thus lead to higher administration costs.

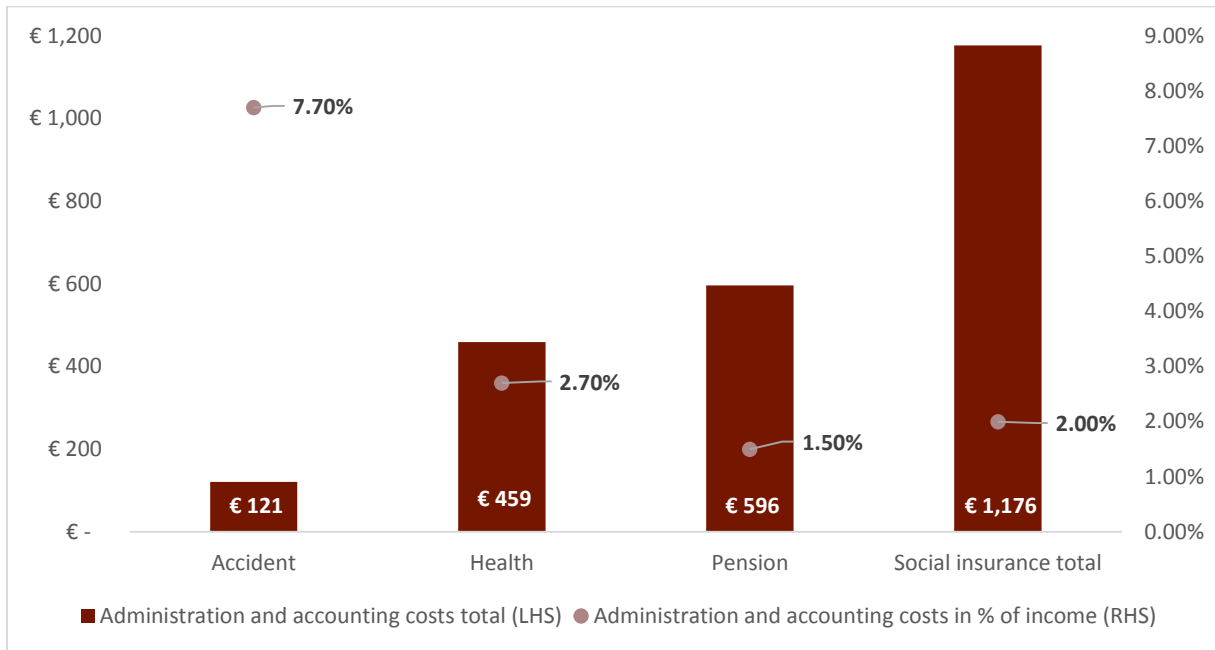
For the reasons outlined above, it is not always appropriate to equate administration with wasteful spending. Thus any analysis of trends in health administration costs should aim to tease out administrative outputs that contribute little to no additional value (597).

8.2.1 Administration costs within Austrian social insurance

Administration costs across all insurance types

In 2015, administration expenditure within Austria's social insurance system totalled €1.2 billion, which on average, accounted for 2% of total income. The figure below outlines actual administration cost (in million euros) as well as administrations costs as a proportion of income for each of the three insurance pillars. Findings from the figure show that pension insurance recorded the highest gross expenditure on administration at €596 million, followed by health (€459 million) and accident (€121 million). This order is reversed when measuring administration costs as a proportion of total income. Specifically, 7.7% of total income within accident insurance was spent on administration followed by health (2.7%) and pension (1.5%).

Figure 165: Administration costs (gross in millions, and % of income) by insurance type (2015)



Source: Data from Verwaltungsstatistik (2015) and Finanzstatistik (2015)

Note: LHS = Left-hand side, RHS = Right-hand side.

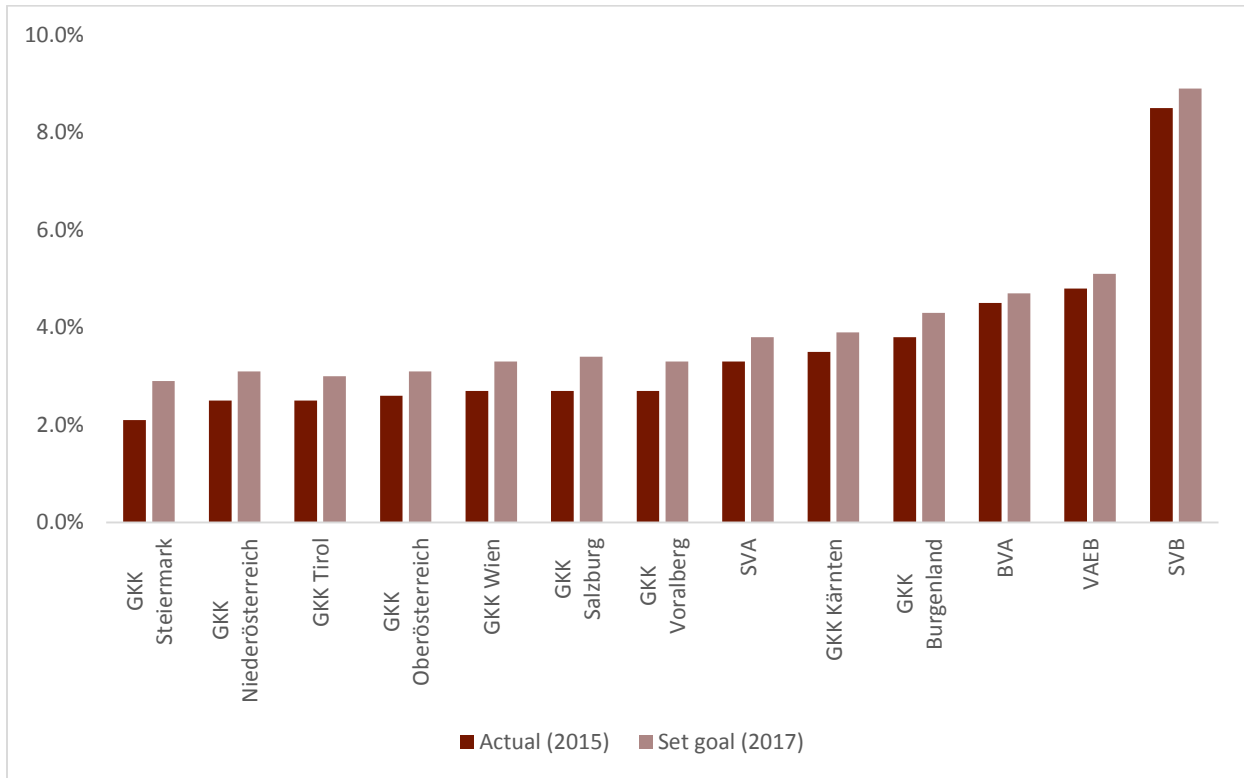
Administration costs by social health insurance carrier

In 2012, a simplified more transparent system for setting administration cost targets, as a proportion of contributions paid, was introduced (§441e ASVG). Social insurance carriers as well as the Ministry of Labour, Social Affairs and Consumer Protection, and the Ministry of Health and Women’s Affairs must agree to these targets. An overview of actual (2015) and set (for 2017) administrative costs for each health insurance carrier has been depicted in the figure below. The figure suggests that those carriers offering multiple forms of insurance (e.g. health, accident and/or pensions) have higher administration costs, which could arise from diseconomies of scope.

The latest administration cost targets were calculated using historical administration costs as a proportion of contribution incomes (i.e. between 2008 and 2010). Specifically, the average historical administration cost plus an additional 0.4 percentage points of the historical value, plus an additional amount to cover costs arising from changes to the law. Once the cap has been set, social health insurance carriers do not have the power to change it.

Implementing simpler more transparent administrative cost caps is a positive move, however, efficiency potentials arising from this policy are not being maximised. For example, high (low) administrative costs are not linked to penalties (rewards), further, adherence to the cap is neither published nor analysed.

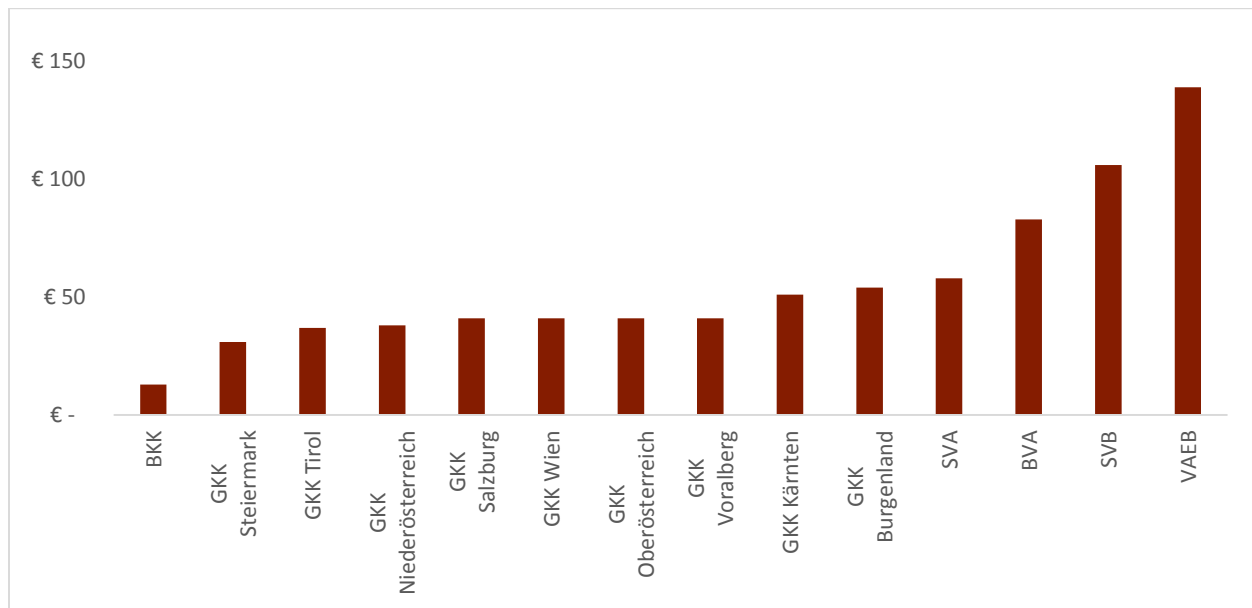
Figure 166: Actual (2015) and set administrative costs (2017) as a proportion of contributions paid



Source: Based on data from Verwaltungsstatistik 2015 and HVSV BSC 2017.

Average administrative costs per person for individual social health insurance carriers has also been examined and outlined in the figure below (total figure including dependents). Administrative costs per insuree range between just €13 and €138, with the average cost equating to €75. It is important to note that the majority of administrative costs associated with BKKs is borne by the employer, and therefore not directly comparable with other health insurance carriers.

Figure 167: Average administrative costs per person by social health insurance carrier (2015) (including dependents)



Source: Data from Finanzstatistik 2015, Hauptverband and Handbuch der Österreichischen Sozialversicherung, 2016.

Caution should be taken when interpreting administrative costs per insurance carrier above. Specifically, lower administrative costs doesn't necessarily indicate greater efficiency given figures do not take into account relevant factors such as:

- Number of claims
- Differences in benefits
- Healthcare risks within the insured population
- Geographical distribution of insured population
- Administrative costs related to provision of services (e.g. hospitals, dental clinics, rehabilitation centres).

For this reason, comparison of administrative costs is more informative when taken at the national aggregate level and compared to similar healthcare systems, that is, social health insurance systems.

8.2.2 International administration costs within healthcare systems

Methodology and caveats

To compare healthcare expenditure and financing data across numerous countries, the OECD developed a System of Health Accounts (SHA), which is based on common concepts, definitions, classifications and accounting rules (598). SHA therefore, in theory, provides a framework for uniform reporting which enables cross-country comparisons and analysis of trends over time (598).

Health administration activities, as defined by SHA, include ‘planning, management, regulation, and collection of funds and handling of claims of the delivery system’, and exclude administration from healthcare providers (598). To date, OECD provides the highest-quality comparisons of healthcare administration costs, however, a number of caveats exist. Namely:

- Administrative costs are likely to be underestimated as they exclude healthcare provider costs
- Countries are not always clear on what should be included within ‘administrative expenditure’, however, the OECD have found that from ‘limited feedback’ most countries use similar methods
- Difficulty disentangling healthcare costs and costs within other forms of care (e.g. social care) and general government activities, which can lead to non-reporting
- Identifying available data sources
- Administrative costs may be the responsibility of a different agency than the health ministry/department, and therefore may be omitted
- An appropriate level of administrative costs does not exist, therefore developing a goal level of administrative cost is difficult
- Administrative costs across countries are not necessarily directly comparable given health insurance carrier responsibilities differ (e.g. all healthcare, or just outpatient care, as in Austria) (597,599).

Social health insurance administrative costs

Figure 168 provides an overview of administrative costs financing scheme as a proportion of current health expenditure (CHE),¹⁰⁷ for countries with social health insurance systems – Austria, Belgium, France,

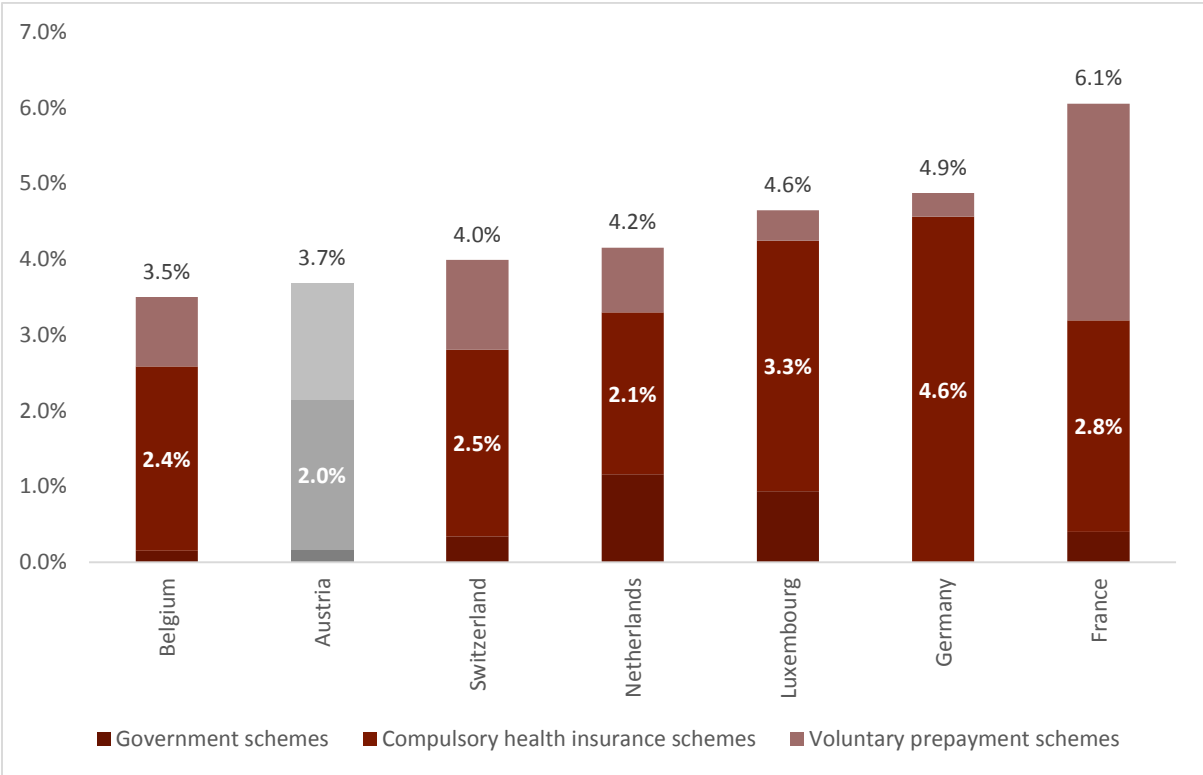
¹⁰⁷ The following criteria were used within OECD SHA to calculate costs: **Function** – governance and health system and financing administration; **Financing scheme** – government schemes, compulsory contributory health insurance schemes/CMSA, and voluntary prepayment schemes; **Measure** – share of current expenditure on health (see link for relevant platform: <http://stats.oecd.org/index.aspx?DataSetCode=SHA>) .

Germany, Luxembourg, Netherlands and Switzerland. This report has only explored these countries given the significant impact of organisational and financial structure on administration costs (600).

Results from the data show that Austria, relative to other SHI countries, has low administrative costs at 3.7% of CHE. Of this amount, 54% can be attributed to compulsory health insurance, 42% to voluntary prepayments and 5% to government schemes. These proportions differ across countries, for example, in Germany, 94% of administrative costs relate to those accrued within compulsory health insurance schemes.

Lastly, the figure for France could be considered an outlier at 6.1%, which reflects the high proportion of people who purchase voluntary health insurance to cover OOP payments (i.e. approximately 95%).^{108,109}

Figure 168: Administrative costs by financing scheme, % current health expenditure (2014)*



Source: (52)

Note: **Government schemes** - Administrative and operational services related to compulsory

¹⁰⁸ Private health insurance is associated with higher administration cost, for example, due to administrative tasks to assess an individual’s risk, set appropriate premiums, designing benefits packages, and reimbursing/refusing claims (7(602)).

¹⁰⁹ Private health insurance is associated with higher administration cost, for example, due to administrative tasks to assess an individual’s risk, set appropriate premiums, designing benefits packages, and reimbursing/refusing claims (7(602)).

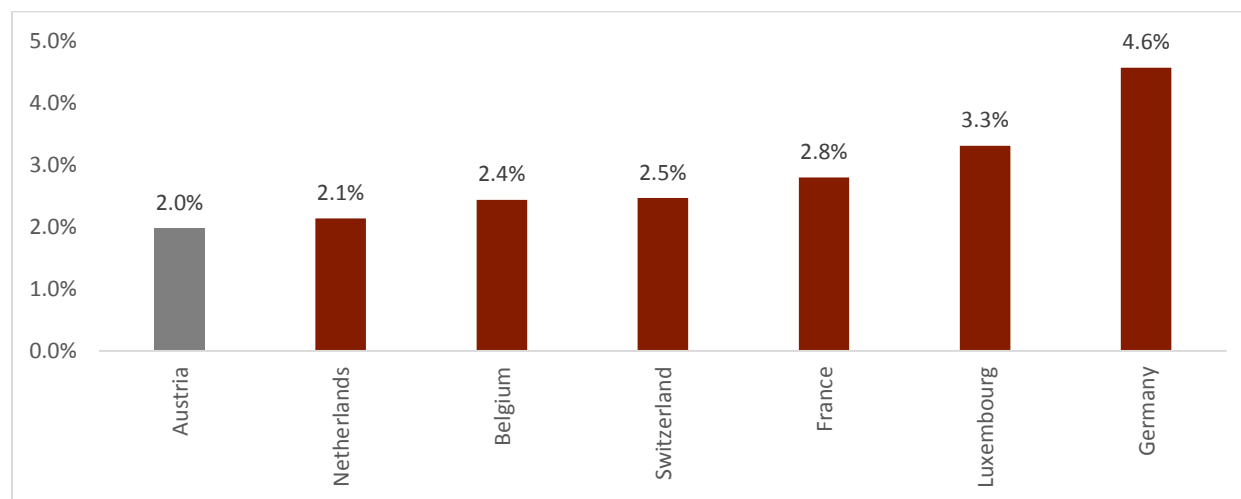
governmental health delivery schemes, involving the provision of benefits due to sickness, childbirth or temporary disablement. **Compulsory health insurance schemes** - Administrative and operational services related to compulsory health insurance schemes, involving the provision of benefits due to sickness, childbirth or temporary disablement. *This graph estimates administration as a % of CHE at 2.4%, this is slightly below the 2.7% recorded previously given a different based was used (i.e. contributions paid).

The data from Figure 168 has been broken down in Figure 169 to show administrative costs for compulsory health insurance only. Similar to overall administrative costs, it is evident that administrative costs within Austria’s social health insurance system are low (at 1.97%). Czypionka *et al.* (2017) noted that this is likely due to: a) the non-competitive nature of the insurance market (i.e. no choice of provider), which means insurance carriers do not expend funds on marketing/advertising; b) bundled transaction costs across service providers; and c) no upfront patient costs that require patient reimbursement and management of significant number of claims (as is the case in France and Switzerland) (603).

Germany recorded the highest administrative costs across the seven countries at 4.56%. Reasons for this may include:

- Low economics of scale due to the high number of sickness funds (over 100 competing sickness funds)
- The nature of the German health insurance system, which require sickness funds to negotiate prices and packages from individual service providers at both the regional and national level (603).

Figure 169: Administrative costs for compulsory insurance schemes, % current health expenditure (2014)



Source: (52)

Note: Health insurance carrier responsibilities differs across countries, therefore figures are not directly comparable.

Impact of carrier numbers on administrative costs

The figure below outlines the change in the number of sickness funds and associated administrative costs within Germany's social health insurance system between 1994 and 2006. Findings from the data show that amalgamation may not necessarily result in greater efficiency as measured by lower administrative costs. Specifically, in Germany, administration costs continued to rise despite the falling number of sickness funds. Only legislative changes in 2004 were able to limit administrative costs within the country's social health insurance system.

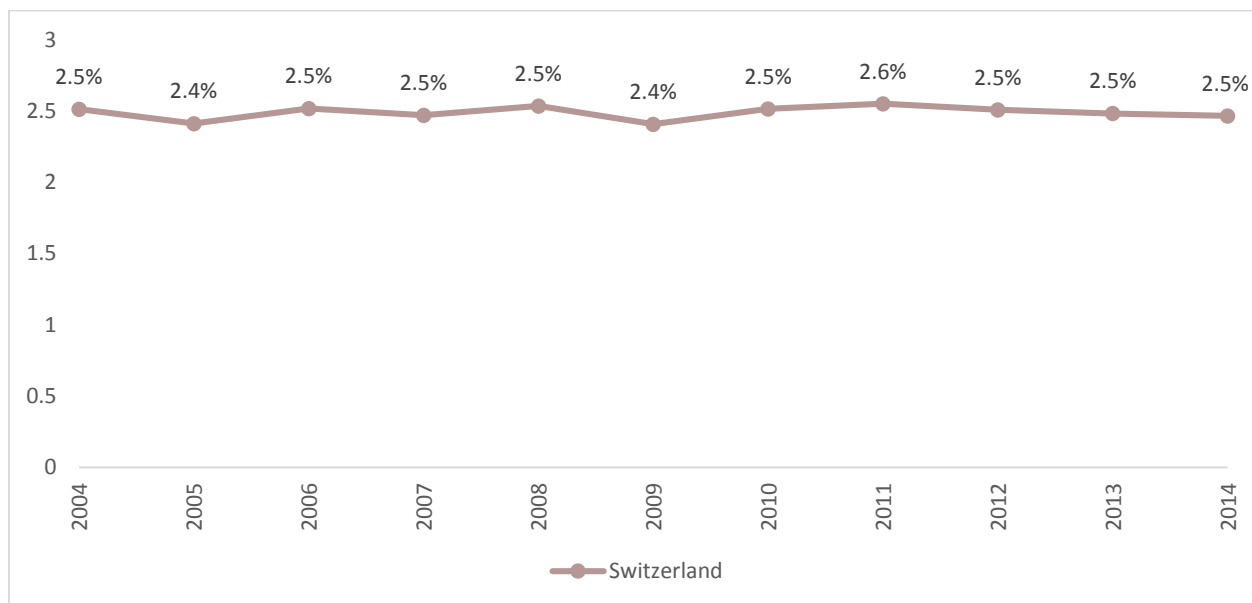
Figure 170: Number of sickness funds and administrative costs (% total expenditure) (Germany, 1994-2015)



Note: LHS = Left axis, RHS = right axis.

Similar findings occurred in Switzerland where the number of carriers fell significantly between 2006 and 2016 (i.e. from 87 to 57). Despite this, administration costs as a proportion of current health expenditure did not change significantly (see figure below).

Figure 171: Administrative costs in Switzerland (% CHE, 2004-14)



Source: (52)

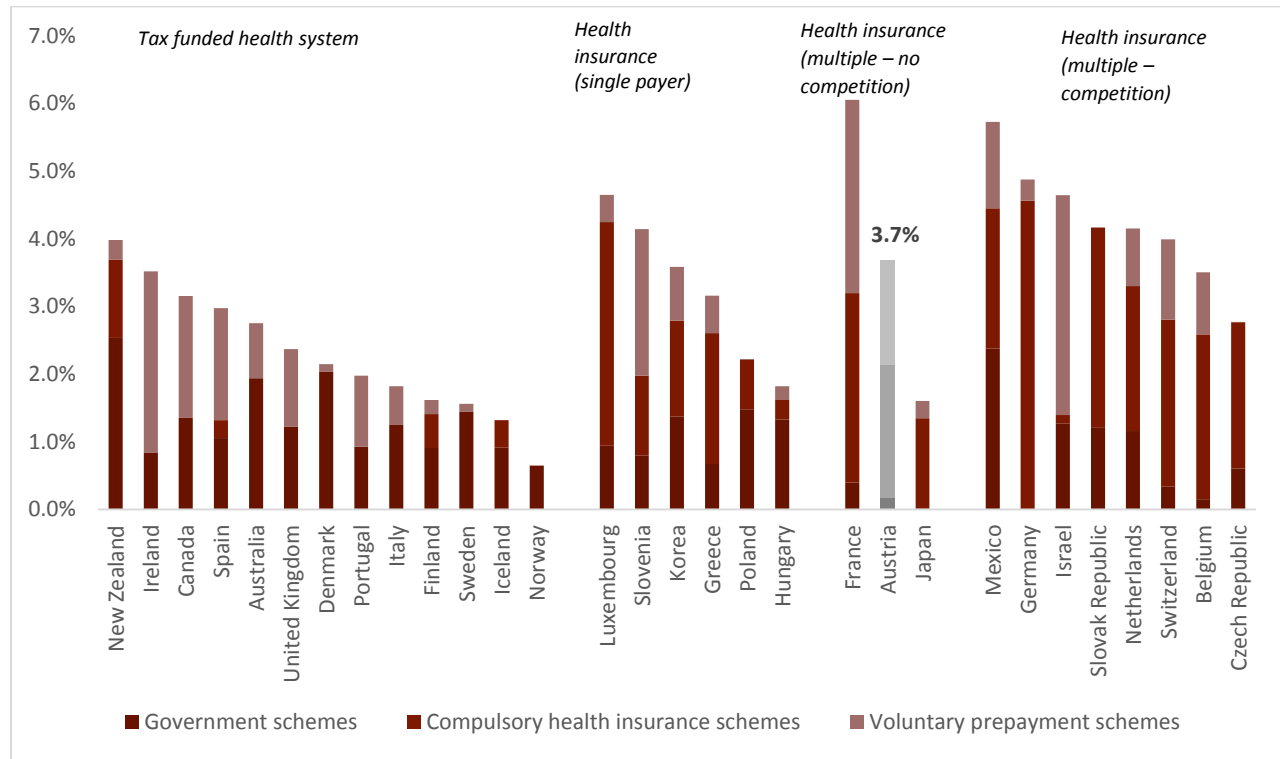
These findings reflect those from Wieser *et al.* who noted that, in Switzerland, ‘there is no link between the size of the funds and the amount of administrative costs per insured person’. For example, within a competitive environment, although carriers may amalgamate, they continue to compete by trying to select insurees with good risks, which results in higher administrative costs (604).

Administrative costs across all healthcare system typologies

Figure 172 maps out administration costs across the following types of health care systems – tax funded, health insurance (single payer), health insurance (multiple insurers with no competition), and health insurance (multiple insurers with competition). In general, single funded systems have lower administration costs compared to those that have multiple insurers (payers). Differences in administrative costs between single and multiple payers may arise from differences in economies of scale (for example, multiple payers have multiple collection agencies, exemption policies and claims processing systems) (597,601). Further, multi-payer systems require sophisticated risk-adjustment mechanisms to ensure all insurers are on the same ‘level playing field’. Such systems are costly and require updating (597).

Multiple insurers with competition have the highest administrative costs, given the associated marketing and advertising costs, developing and executing multiple selective contracts, and keeping the list of insured people up-to-date.

Figure 172: Administrative costs across different types of healthcare systems (2014)



Source: (52)

Summary

There exist systematic differences in administrative costs across different types of healthcare systems. Specifically, healthcare systems that have a single payer and/or in systems whereby insurers do not compete have lower administrative costs. Austria, being a country with multiple healthcare payers (i.e. health insurance carriers) that do not compete, has neither high nor low administrative expenditures when compared to all forms of healthcare systems.

Given significant differences across healthcare system types (see Figure 172), administration costs in Austria should only be compared with other social health insurance systems, namely, Belgium, France, Luxembourg, Germany, the Netherlands, and Switzerland. Using the latest available data from the OECD (2014), it is evident that across social health insurance systems, Austria has the lowest administrative costs at 1.97% of current health expenditure. Caution should be taken when interpreting results given there are numerous caveats associated with using and comparing this type of cost data across countries.

8.2.3 Policy options: Administration costs

Relative to other social insurance systems, Austria has low administration costs. However, among social insurance carriers there exists significant variability, with administrative costs per insurance case (excluding dependents) ranging from €18 (BKK) to €188 (VAEB) (see Figure 167). It is unclear whether these disparities are justified by factors such as number of claims, differences in benefits and/or geographical distribution of insureds. For this reason, it is recommended that a detailed study into factors impacting administration costs at the individual insurance carrier level be undertaken.

Based on the study's findings, a more appropriate system for developing administration cost caps could be implemented. Specifically, given targets are set above historical rates (i.e. 0.4 percentage points above), carriers have already achieved their target (see Figure 166), thus removing any incentive to reduce administrative costs. Instead of using historical values, administrative cost targets could be based on potential economies of scale arising from more streamlined administrative functions. For example, by implementing structural models 1, 2 or 3, or by coordinating current activities, as proposed under model 4. If, however, the current calculation method is retained, it is recommended that health insurance carriers be required to document how additional administration costs were spent. For example, to improve overall health system performance by collecting and analysing additional data to monitor quality of care. Such activities may in the medium- to long-term increase overall system performance and savings, which could be used to enhance front-line services. Concurrently, it is advised that social health insurers be encouraged to implement practices that reduce other forms of administration costs, that is, those that do not directly enhance service provision.

Legal considerations

No particular constitutional impediments have to be faced in this respect.

8.3 Healthcare fraud

8.3.1 Definition of healthcare fraud

A number of researchers and institutions have developed succinct definitions of fraud (also commonly referred to as corruption) within the healthcare sector. The definition used by the European Healthcare Fraud & Corruption Network (EHFCN) refers to that developed by the Institute of Medicine of the National Academies (USA), which differs according to whether corruption occurs in the public or private sector:

‘Passive corruption in the public sector occurs whenever a public official, directly or indirectly, intentionally or in circumstances where it should have been known to him or her, requests or receives any undue advantage for himself or herself or for a third person, or accepts an offer or a promise of such advantage, in order to act or refrain from acting in the exercise of his or her official functions’

‘Directly or through an intermediary, requesting or receiving an undue advantage of any kind, or accepting the promise of such an advantage, for oneself or a third party, while in any capacity directing or working for a private sector entity, in order to perform or refrain from performing any act, in breach of one’s duties.’

Source: (605)

Transparency International, an international non-profit, non-governmental organisation dedicated to combating corruption, along with Vian (2007) define corruption more succinctly as misuses of entrusted power for one’s private gain (606,607).

8.3.2 Types of healthcare fraud

Multiple studies summarise types of fraud in the healthcare sector. Of most significance are the typologies developed by Vian (2007) and Transparency International (2016), which can be grouped by the following themes:

- Financial and workforce management
- Delivery of healthcare services
- Regulation
- Research and development
- Marketing
- Product distribution and storage
- Budget and resource management
- Governance (further details provided in the table below).

Types of fraud in Austria’s healthcare system include informal payments, favouritism, and instances of doctors in public hospitals encouraging patients towards private health care facilities. For example, a report undertaken by Czymionka *et al.* (2007) found that 15% of respondents (nine in total) had been suggested that they visit a private clinic to ensure an earlier operation date (608).

Table 92: Types of fraud in the healthcare sector

Type of fraud	Examples
Financial and workforce management	Inappropriate selection for jobs, promotions and training
	Accreditation of health professionals
	Absenteeism
	Embezzlement and misuse of funds
	Up coding
Delivery of healthcare services	User fee revenue
	Informal payment from patients
	Unnecessary referrals and procedures
	Private use of public products, equipment, facilities or time
	Favouritism by healthcare providers for certain clients
	Overcharging for services or providing inferior services
	Manipulation of outcome data
Regulation	Unnecessary referrals and procedures
	Inappropriate approval of products
	Improper product quality inspection
	Improper approval of professional accreditation
Research and development	Inappropriate health facility/workers certification
	Abuse of power
	Abuse of researching funding systems
	Improper trial/study design

Type of fraud	Examples
	Misleading dissemination of results
	Conflict of interest
	Recruitment for trials
	Improper inducements to healthcare providers and facilities
	Improper advertisement
Marketing	Improper advertisement
	Improper post-marketing trials/studies
	False or misleading product claims
	Disease/fear mongering
	Theft and diversion of products
Product distribution and storage	Infiltration of falsified and substandard products (biased application of accreditation, certification or licensing procedures and standards)
	Re-packaged non-sterile and expired products
Budget and resource management	Payroll management
Governance	Abuse of power

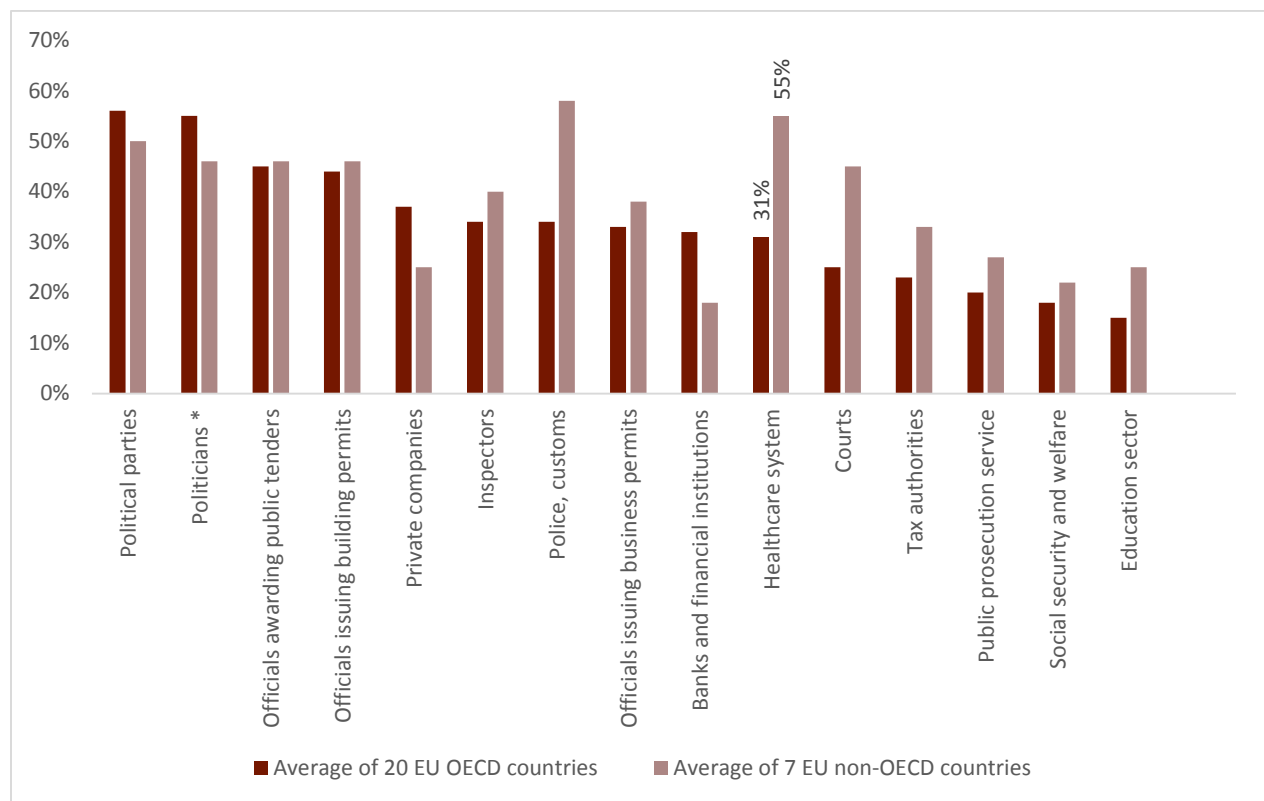
Source: (606,609)

8.3.3 Causes of healthcare fraud

Weak internal controls and minimal government oversight, foster fraud and error amongst citizens and agency employees within a social welfare system. For example, if there is a perception that the penalty for committing fraudulent behaviour is unlikely or minimal, individuals are more likely to engage in such behaviour.

The healthcare sector is susceptible to fraud for a number of reasons (see figure below for the perception of corruption in a range of sectors) (610). These include, but are not limited to: information asymmetry (where the provider has more information/knowledge than the patient), patient susceptibility, complexity of products and services, uncertainty (e.g. outcomes from treatment), significant amounts of public money, sector decentralisation/fragmentation, opaque pricing (i.e. supply and demand do not determine the 'right' market price), and the high-level of private sector involvement (597,609).

Figure 173: Corruption perception across sectors in EU OECD countries versus EU non-OECD countries (2014)



Source: (611)

Note: data not available at the country level.

8.3.4 Consequences of healthcare fraud

Measuring the financial cost of fraud and medical error has gained prominence among policy-makers and researchers over the last 15-20 years. This is reflected by the growing number of agreements and studies estimating this type of waste. For example, the number of fraud and error measurement exercises increased from 25 to 268 between years 1997-2001 to 2012-2016 (612). The majority of this work has been undertaken in the US with the introduction of the *Improper Payments Information Act (IPA)* (2002),

which mandates US public authorities to: a) identify programs and activities that may be susceptible to improper payments (payment that should not have been made or that was of the incorrect amount); and b) to estimate the annual cost of the improper payment (613). In Europe, no legal requirement to measure fraud and error has been implemented, however, in 2004, 28 EU member states agreed to the *European Healthcare Fraud and Corruption Declaration*. The declaration outlines eight objectives, including the ‘development of a European common standard or risk measurement, with annual statistically valid follow-up exercises to measure progress in reducing losses to fraud and corruption throughout the EU’ (614).

In addition to financial consequences, fraud and error in the healthcare sector has both direct and indirect negative impacts on patients and human lives. For example, through provision of substandard medicines, inequality in access to care (e.g. through informal payments), distorted allocation of resources and poor quality care. In addition to these, fraud and error has an adverse impact on healthcare budgets.

For the purpose of this review, only specific information on the financial consequences of fraud and error have been explored.

Cost of healthcare fraud

As outlined with the OECD’s 2016 paper, ‘Tackling Wasteful Spending on Health’, measuring the frequency and associated cost of fraud and error in the healthcare sector is challenging (615). Reasons for this are: the existence of multiple definitions for what constitutes fraud and error in the healthcare sector, the inability to define and contain fraud into one basic metric that can be adopted by different countries, and the fact that fraudulent activities are hidden.

Despite these caveats, several international studies have been undertaken to measure the cost of fraud in the healthcare sector (see table below for further details). Using data from the various studies, it could be stated that approximately 5-6% of all healthcare spending is lost to fraud (with estimates ranging from 0.01% in the UK to 10% in the US).

Given the shortcomings outlined above, results from the studies are not comparable across countries. Further, caution should be taken when interpreting figures of detected healthcare fraud as these are likely to be underestimated (612).

Table 93: Overview of studies estimating the cost of fraud in the healthcare sector

Author	Year	Country	Cost
NHS Protect	2016	UK	£6.5 billion lost to fraud in 2015-16 or 0.01% of NHS net expenditure
National Institute for Health and Disability Insurance	2016	Belgium	Health insurers unjustly billed €11.6 million
Gee & Button	2015	UK, France, Belgium, Netherlands, Australia, and New Zealand	6% of total healthcare between 1997-2013
CNAMTS (France)	2014	France	€200 million lost to healthcare fraud in 2014 (or 1% of health insurance benefits)
Ley & Button	2013	Italy	5.59% of healthcare expenditure, on average
Association of Health Insurance Funds	2013	Germany	Detected €43 million in fraud
Accenture	2013	US	Between 2-10% of healthcare spending is lost to fraud (on average, this costs US\$60 billion)

Author	Year	Country	Cost
EHFCN	2013	EU countries	€56 billion lost annually to fraud and error
EHFCN	2010	Germany	5-8% of total healthcare in 2010

Source: See country profiles (in addition to (610)).

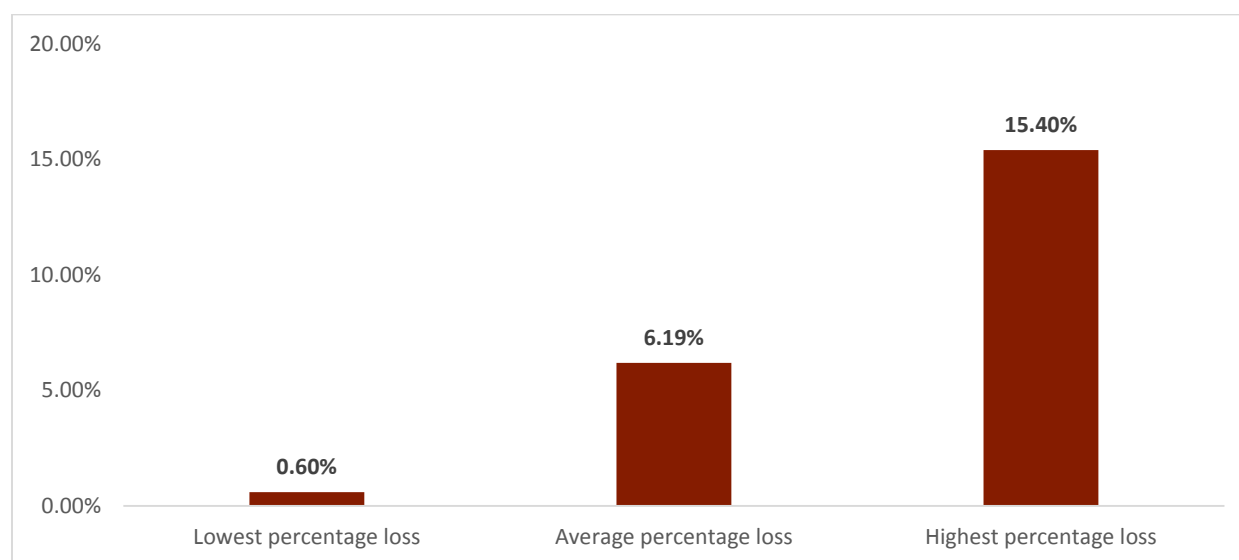
Multiple countries

The most commonly referred to study on the cost of fraud and error in the healthcare sector is undertaken by Gee & Button, who provide frequent estimates across a number of countries (616). Within their calculations, the authors include the following areas to measure healthcare fraud: fraudulent sickness certificates, prescription fraud by pharmacists and patients, in addition to fraud and error concerning: capitated payments to GPs and doctors to manage a patient's care, evasion of dental charges by patients, opticians regarding eye tests, healthcare organisation employees, inpatient, long-term, home and community-based services, provision of services and supplies, health insurance for children, foster care, and finally, childcare (617).

The latest available report is from 2015 and includes the following six countries: UK, France, Belgium, Netherlands, Australia, and New Zealand. Results from the study show that, on average, 6% of total health expenditure (or £229 billion) was lost to fraud and error between 1997 and 2013 (see figure below) (616).¹¹⁰

¹¹⁰ The authors do not disaggregate between the total cost by fraud and the total cost of medical errors.

Figure 174: Proportion of healthcare expenditure lost due to fraud and error (1997-2013)



Source: (616)

Note: Data not provided at the country level.

Belgium

The Medical Evaluation and Inspection Department (MEID) within the National Institute for Health and Disability Insurance in Belgium is responsible for ensuring the accountability of healthcare providers, and deter fraudsters and abusers. The latest available data show that healthcare providers inappropriately billed €11.6 million to health insurance. Of this amount, €5.3 million was reimbursed by health insurance on a voluntary basis (618).

Italy

In Italy there are 12 main drivers of fraud in the healthcare sector, four are associated with supply-side and 12 on the demand-side (see the table below for further details) (619). A report undertaken by Ley and Button (2013) estimated that the average rate of fraud in the country's healthcare system is 5.59%, with a minimum and maximum rate of 3.29% and 10%, respectively (619). As a proportion of total health expenditure, this translates into €6 billion a year (619).

Table 94: Drivers of corruption in Italy's healthcare sector

Demand-side drivers	Supply-side drivers
<ul style="list-style-type: none"> • Uncertain or weak regulatory framework • Information gaps across health system users • Fragmentation for the demand for health services 	<ul style="list-style-type: none"> • Political interference in technical-administrative choices • System complexity • Far-reaching powers • Low level of accountability • Low ethical standards • Information gap between health system and private suppliers • Growth of private health care • Lack of transparency in use of resources

Germany

A report undertaken by EHFCN estimated that between 5-8% of healthcare expenditure was lost to fraud and corruption, specifically from:

- Billing for services that were never rendered
- Providing unnecessary treatments or tests
- Up-coding (billing for a more expensive diagnosis than was provided)
- Falsifying or exaggerating the severity of a patient's illness
- Kickbacks for referrals
- Offering incentives to actual or potential referrals
- Counterfeit drugs (620).

The cost of fraud among social insurance carriers in Germany has also been calculated. In 2013-14, for example, the Association of Health Insurance Funds detected €43 million in fraud (615).

United Kingdom

Each year NHS Protect, which works to protect NHS staff and resource from crime, publishes an annual report providing an estimate on the cost of fraud, bribery and corruption. In 2015-16, NHS Protect

received 5,000 reports concerning fraud and corruption, of these, 900 were investigated. Following the conclusion of investigations, NHS Protect in collaboration with Local Counter Fraud Specialists (LCFS) in 2015-16 estimated the total cost fraud in healthcare at £6.5 million. This figure equates to 0.01% of NHS net expenditure within the same financial year (621,622). Finally, as noted in NHS Protect’s 2015-16 annual report, the organisation is currently investigating allegations of fraud, bribery and corruption that equate to over £25 million (622).

8.3.5 Strategies to combat potential sources of healthcare fraud

Findings from the literature

Within the peer-reviewed literature on healthcare corruption, Vian, T. is one of the most cited researchers. In 2008, Vian released a paper outlining a conceptual model of corruption in the healthcare sector. Within this framework, six institutional factors that impact the level and opportunity for healthcare fraud have been identified, namely: monopoly power, discretion, accountability, citizen voice, transparency and enforcement (606). Each of these factors and aligning high-level strategies have been explained in detail in Table 95.

Table 95: Institution factors impacting corruption in the healthcare sector

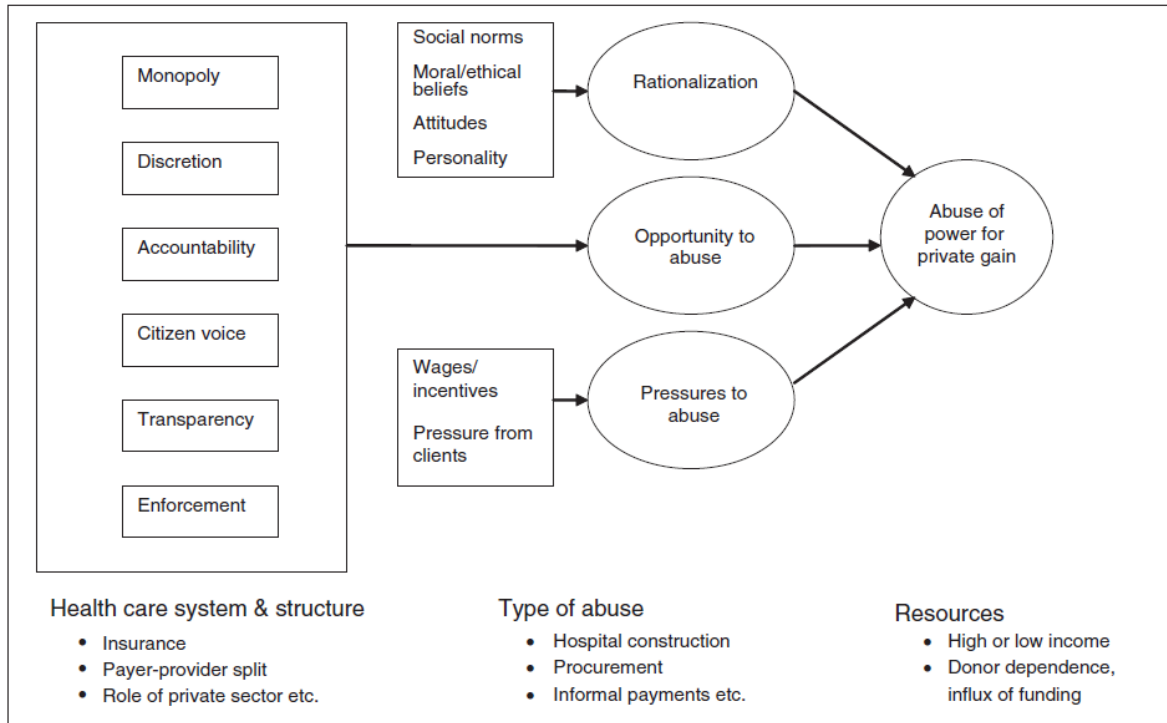
Institution factor impacting level of corruption	Description	Example high-level strategies
Monopoly power	Monopoly power refers to a situation where there is only one provider of healthcare goods and services. Such a situation limits individual choice and increases the opportunity for corruption (e.g. the provider may demand bribes to access certain services).	<ul style="list-style-type: none"> • Reforms to separate payer and provider • Privatisation
Discretion	Discretion describes the situation where a government agency has full autonomy over	<ul style="list-style-type: none"> • Create a system of checks and balances

Institution factor impacting level of corruption	Description	Example strategies	high-level
	key decisions in the healthcare sector. High levels of discretion increase the likelihood of corruption.	<ul style="list-style-type: none"> • across different people/departments • Strengthening information systems • Develop standard operation policies and procedures that all must follow 	
Accountability	Accountability ensures that providers are held accountable to the objectives and services they are funded to deliver. Low levels of accountability encourage corruption.	<ul style="list-style-type: none"> • Robust information systems outlining how inputs are translated into outputs • Incentives that rewards (penalises) good (bad) performance 	
Citizen voice	Citizen voice refers to mechanisms that allow individuals to actively participate in the planning and provision of services. High levels of citizen involvement reduce the possibility of corruption.	<ul style="list-style-type: none"> • Implementation of local health boards • Patient surveys • Complaint offices 	
Transparency	Transparency is closely related to accountability, and specifies that providers disclose information on decision making processes and performance.	<ul style="list-style-type: none"> • Legally enforced disclosure of information 	

Institution factor impacting level of corruption	Description	Example strategies	high-level
	Greater transparency lowers the possibility of corruption.	<ul style="list-style-type: none"> Publically available information performance 	available
Detection and enforcement	Detection and enforcement relates to the 'steps' taken to collate evidence on corruption and penalise those who are caught engaging in such practices. Better detection and enforcement policies lower the possibility of corruption.	<ul style="list-style-type: none"> Surveillance Internal security Investigations Anonymous centres for reporting corruption 	for

Source: (606)

Figure 175: Conceptual framework of corruption in the healthcare sector



Source: Taken directly from (Vian, 2008) (606)

More recently, Gaitonde *et al.* (2016) undertook a review of interventions aimed at reducing corruption in the healthcare sector (623). The interventions identified within the review can be broken down into seven categories, which largely overlap with those produced by Vian (2008). Specifically, information dissemination, detection and enforcement, establishment of an independent agency, transparency and accountability, discretion, incentives, and monopolies (623). Interventions within each of these categories were then assessed according to their impact on corruption (as well as adverse effects, resource use, and health and health outcomes). Results from this exercise show that information dissemination, detection and enforcement, transparency and accountability, and establishing an independent agency (who coordinates anti-corruption behaviour) had desirable effects on corruption. However, there was only high certainty of evidence for the impact of an independent agency. The impact of remaining factors on corruption had medium to very low certainty of evidence and have therefore not been reported in this review (623).

8.3.6 International case studies: Strategies to address healthcare fraud

This section outlines healthcare fraud and error strategies implemented within Australia, Belgium, France and the UK. Arrangements for each of the institutional factors, as identified by Vian's conceptual framework (2008), have been mapped for each of the countries outlined above.

Although each country has adopted a unique approach to combating healthcare fraud, one component they all have in common is the existence of a specific institution/body responsible for addressing healthcare fraud.

Australia

In Australia, fraud against the Australian Government is defined as 'dishonestly obtaining a benefit, or causing a loss, by deception or other means' (624). The Audit and Fraud Control Branch of the Australian Federal Department of Health is responsible for detecting and investigating cases of fraud within the healthcare system. Specifically, for fraud that occurs within Medicare (universal healthcare system for Australians), the Pharmaceutical Benefits Scheme (PBS) (government subsidises for eligible medicines, the Child Dental Benefits Scheme, and other health relative incentives programs (625).

Cases of fraud against healthcare providers within any of the above schemes can be reported by anyone using an online 'tip-off form', which allows user to confidentially report on any fraudulent or suspicious activity. Alternatively, users can call the 'Provider Compliance Tip-off Line' (since its establishment in February 2016, the hotline has received 850 tip-offs) (624,626). Online links and resources are also available to those who wish to report against Australian Public Servants or to report cases of fraudulent behaviour occurring at the administration level of Australian healthcare programs (624).

In Australia, potential cases of fraud within the healthcare system are investigated at the state level. If serious enough, the Department will coordinate investigations with state or Federal Police. Such cases may also be referred to the Commonwealth Director of Public Prosecution (CDPP) for consideration of criminal prosecution (624).

In 2015-16, the department continued to deliver a range of fraud minimisation strategies. These included a whole-of-government fraud awareness eLearning package, as well as presentations to public healthcare sector staff on fraud awareness (626).

In the financial year 2015-16, the Department undertook 190 investigations into fraud, up from 169 in 2014-15. The Department referred 35 investigations to the CDP, which included: 31 matters relating to corporate entities/employers, employees or their associations, three matters concerning health providers, one matter relating to pharmacists (626).

Belgium

The Law Concerning Compulsory Healthcare and Disability Insurance (July 1994) (H&D Insurance Law hereafter), established the National Insurance for Health and Disability Insurance (NIHDI), a public social security institution that manages and supervises compulsory health care and benefits in Belgium. Within NIHDI sits the Department of Inspection and Control, which can be broken down into two sub-groups, namely the Department for Administrative Control and the Medical Evaluation and Inspection Department (MEID) (618).

MEID is a national institute with regional branches and is the most relevant body for tackling fraud and error within the Belgium healthcare system. Further information regarding the institution’s role, mission, strategy, budget and staffing are outlined in Table 96.

Table 96: Medical Evaluation and Inspection Department (Belgium) characteristics

Characteristic	Description
Role	<ul style="list-style-type: none"> • Raise accountability of healthcare providers • Deter potential fraudsters and abusers • ‘Fight’ healthcare fraud
Mission	Support the optimal use of resources within the compulsory healthcare and disability insurance
Budget	€30 million annually
Staffing	261 staff, including 73 ‘back office’ staff and 188 working within regional branches. Team is multi-disciplinary including doctors, nurses, analysts and lawyers. Medical inspectors each have an

Characteristic	Description
	area of expertise and professional training is continuous.

Source: (618,627)

To be specific, under the H&D Insurance Law, MEID has legal competences to investigate and prosecute the following eight forms of healthcare fraud:¹¹¹

- Billing for healthcare that has not been provided: fine ranging between 5-200% of the total amount defrauded
- Billing for healthcare provisions non-compliant with coding rules (i.e. incorrect pricing): fine ranging from 5-150%
- Billing for healthcare provisions that cannot be considered preventative nor curative: fine ranging between 5-100%
- Healthcare provisions that can be considered as unnecessary and/or unnecessarily expensive: a fine ranging between 5-100%
- Prescriptions that can be considered as unnecessary and/or unnecessarily expensive: fine ranging between €500-€50,000
- Overprescribing of specific (expensive) medication: a fine between €500-€20,000
- Billing with documents that do not comply with administrative formalities: a fine between €50-€500
- Incitement of healthcare providers to provide or to prescribe unnecessary and/or unnecessarily expensive provisions: fine between €1,000-€250,000 (618).

Since 2016, MEID has begun reporting frequency of fraud by healthcare profession according to a 'waste typology matrix', which distinguishes different types of infringements. Within the matrix there exists four categories, namely: **error** (benefiting by unintentionally breaking a rule), **abuse** (benefiting by 'stretching a rule', thus taking advantage of limited rules/guidelines), **fraud** (benefiting by intentionally breaking a rule), and **corruption** (benefiting from abusing power with third party involvement) (618).

¹¹¹ Information taken directly from Vincke. P (2017), within *Healthcare Fraud, Corruption and Waste in Europe: National and academic perspectives*. Edited by Mikkers et al.

Between 2014 and 2015, the number of infringements sanctioned by MEID increased by 93% (i.e. from 635,325 to 1,225,585). Of these infringements, 887 led to investigations which found that €11.6 million of healthcare providers unjustly billed; of this amount, 60% (€6.9 million) was voluntarily refunded, while an additional 46% was paid after receiving a warning (4% was not re-paid) (618).

Although fraud-related investigations only comprise 8.4% of all investigations (i.e. 75 of the 887), these cases made up 38.57% unjustly billed costs (as a result of billing for services not rendered, or performing unnecessary care). Of this amount, just 32.53% of was voluntarily refunded, highlighting the difficulty associated with recuperating healthcare fraud costs.¹¹²

An evaluation into the long-term impact of MEID revealed that the institution has been successful in changing people's attitudes towards healthcare fraud. For example, action to reduce the number of redundant restorative fillings in 2011 continues to save approximately €8 million annually. Further, in 2010, action to ensure correct use of evoked potentials (i.e. measures the time taken for nerves to respond to stimulation), on average, saves €7 million each year (618).

In addition to MEID, in 2014, the Anti-Fraud Commission for healthcare was established. NIHDI and the seven mutual health funds are represented within the Commission, which aims to combine efforts to address fraud involving patients and providers (e.g. certificate theft, billing for healthcare not provided) (618).

France

At the national level, the Audit Department and Counter Fraud Office (DACCRF, Direction of audit, control and sanctioning of fraud), which is attached to the CNAMTS, is responsible for 'investigating, prosecuting and preventing fraud' by developing a national strategy. The strategy is then defined within a set of guidelines, which are disseminated to local health insurers (see the table below for an overview of healthcare fraud responsibilities at the national, regional and local level).

¹¹² Data provided directly from NIHDI.

Table 97: Healthcare fraud responsibilities by level of government (France)

Level	Responsibilities
National	DACCRF responsible for investigation, prosecution and prevention of fraud
Regional	Coordinates investigation programs at the national level, in addition to local and regional activities
Local	Implemented fraud prevention policies (e.g. handling of fraud reports)

Source: (618)

To undertake healthcare fraud related activities, CNAMTS is provided with a budget of approximately €104 million (as of 2014). Part of this budget is used for staffing, which includes statistical experts, legal experts, and administrative and medical expert investigators. There are approximately 1,572 full-time employees within sickness insurance who are involved in activities directly related to investigation, prosecution and prevention of healthcare fraud (618).

Prevention of healthcare fraud was identified as a key priority within the 2004 *Assurance Maladie* (sickness insurance) Law. The importance placed on healthcare fraud is also evident from changes to Social Security Law, which are outlined in Table 98.

Table 98: Changes to Social Security Law to combat healthcare fraud (France, 2004)

Measures	Example actions*
Administrative	<ul style="list-style-type: none"> • Warning to the provider • Range of financial penalties • Prior authorisation for prescriptions provided by targeted physicians • Physicians with unusual prescription behaviour must accept to change his/her practice, if not prior authorisation will be implemented

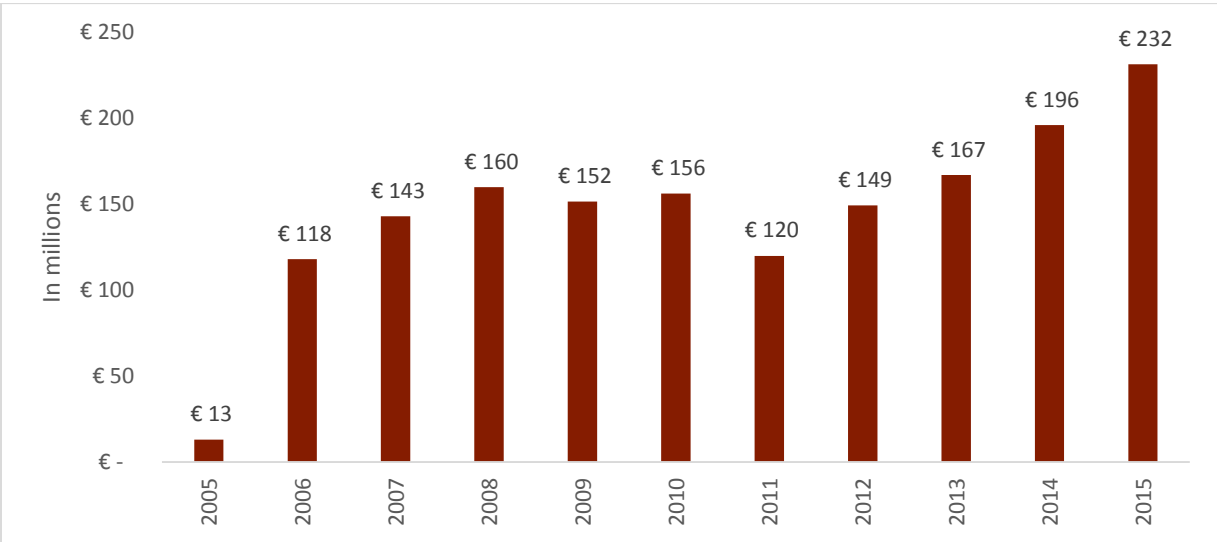
Measures	Example actions*
Legal	<ul style="list-style-type: none"> • Referral to the Chamber of Doctors • Referral to the court (with criminal sanctions of up to seven years in jail, and a financial penalty of €750,000)

Source: Data provided by IEC member.

The specific action taken by social health insurance depends on how the act is classified, that is, as either fraudulent, wrongful or abuse. **Fraud**, which involves intentionally committing an illegal act results in a financial penalty and legal consequences; **wrongful unintentional activities** that are irregular lead to financial penalties; while providers who **abuse** services or their prerogatives are notified to their relevant professional body (618).

By intensifying and professionalising efforts to combat healthcare fraud, the total amount of fraud and abuse detected and stopped, in terms of undue payments by sickness funds, increased from €13 million in 2005 to €231.5 million in 2015 (see figure below) (618).

Figure 176: Amount of fraud and abuse detected and stopped (in millions)



Source: (618)

England

NHS Protect is the agency responsible for tackling fraud, bribery and corruption, within NHS England and NHS Wales (628). NHS Protect takes a multi-faceted approach to tackling fraud in the healthcare sector, which is both proactive and reactive (629). Within the current NHS Protect Strategy (as of October 2016), three ‘key principles for action’ have been defined to deal with incidences of crime (including fraud and corruption). At a high-level these are to ‘inform and involve’, ‘prevent and deter’, and ‘hold to account’ (further details provided in the table below

Table 99).

Table 99: NHS Protect’s principles for action

Principle	Description
Inform and involve	NHS Protect is to inform and involve NHS staff on fraud, bribery and corruption in order to increase understanding of the impact of crime against the NHS.
Prevent and deter	NHS Protect works to remove opportunity for fraudulent behaviour to occur and discourage those who may commit such crimes (e.g. by reporting on successful prosecutions).
Hold to account	NHS Protect professionally trains specialists to tackle crime (including fraud, corruption and bribery). This assists in ensuring crimes are detected and investigated, and where appropriate, suspects prosecuted.

Source: (629)

In 2015, NHS Protect launched a new online fraud and corruption reporting tool. The [online tool](#)¹¹³ allows anyone to report concerns of fraud within the NHS (i.e. when fraud led to loss of NHS funds); reporters can choose to provide their name and contact details, or report anonymously (630). Information on fraud within the NHS is also collected through data sharing arrangements with the wider NHS, public sector bodies, and professional regulatory bodies.

Investigations into instances of fraud are undertaken by Local Counter Fraud Specialists (LCFSs) who are nominated and accredited by NHS Protect. All LCFSs receive university accredited training, which ensures they have nationally recognised qualifications. LCFSs are supported by NHS Protect Area Anti-fraud Specialists (AAFSs), who are the link between NHS Protect and NHS commissioners and providers. A key role of these specialists is to ensure investigations into allegations of fraud follow legislative guidelines and are of the highest standard (631).

NHS Protect also plays a role in education NHS staff and the public on fraud, bribery and corruption within the healthcare sector. For example, NHS Protect in 2015-16:

- Produced an aide-memoire for the Department of Health and NHS Improvement on anti-fraud safeguards in the provision of agency staff
- Developed guidance for providers within the NHS and NHS commissioners, as well as employment agencies, on pre-employment checks and invoicing for agency staff as a way to reduce fraud in these two areas
- Developed material on agency fraud that is made available on the NHS employers online tool for NHS managers
- Provided university-accredited training and key skills development training to 266 LCFSs and Local Security Management Specialists (LSMSs) working for NHS health bodies
- Produced significant material for the media to inform the public and NHS staff on their anti-crime message (over 34 million opportunities to view anti-crime adverts); a further 416 media articles were published on successful anti-crime work undertaken by NHS Protect
- Ran a total of six workshops on anti-fraud standards to NHS commissioners which explained the role of the commissioners under NHS Protect standards

¹¹³ See: <https://www.reportnhsfraud.nhs.uk/>

- Required 251 NHS providers and 190 NHS commissioners to undertake self-reviews of fraud, bribery and corruption standards (622).

In the financial year 2015-16, NHS Protect received 5,000 reports relating to potential fraud and corruption within NHS England and NHS Wales. Of these, the AAFs authorised investigations into 900 of these cases. In the same year, nine criminal prosecutions were carried out successfully following investigations into the most complex cases of fraud, bribery and corruption.¹¹⁴ A further 258 civil, disciplinary and other internal sanctions were applied by NHS Protect, other NHS organisations and professional bodies following successful investigations (622). In terms of financial costs, in 2014-15, the value of fraud, bribery and corruption in the NHS amounted to £11.9 million, of which £2.4 million was recuperated by NHS Protect and LCFs (618).

8.3.7 The Austrian situation

When assessing possible types of fraud, one must differentiate between fraud committed by providers or consumers of health care. Consumer-related types of fraud encompass the evasion of paying health insurance (or social insurance) contributions (e.g. via illegal work in the private sector, fictitious self-employment, illegal occupations or dummy concerns) and misuse of healthcare (or social insurance) services. Examples of the latter include subreption of social insurance coverage (e.g. via complaisance), identity fraud and use of services by non-entitled parties (e.g. use of other persons' e-cards), fraudulent use of services due to wrong depiction of earning capacity or pretense of place of residence. By contrast, provider-related fraud includes, amongst other, the submission of false claims, corruption (e.g. acceptance of informal payments), and misuse of working hours (632).

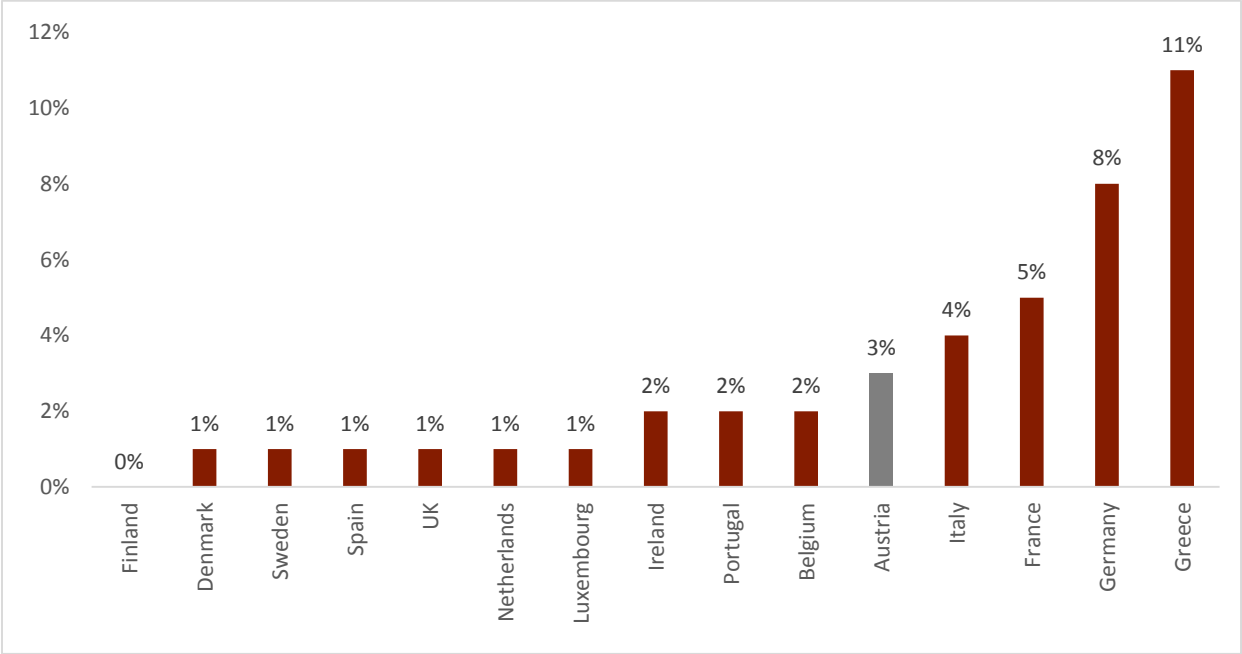
To date, there has been limited research into the types and costs associated with healthcare fraud in Austria. As a result, only two forms of healthcare fraud have been quantified (2014), specifically within the *Special Eurobarometer Report on Corruption* (611).

Results from the survey identified two forms of provider-related healthcare fraud in Austria. The first, relates to informal payments (or gifts) to providers to skip waiting lists. Specifically, 3% of those surveyed stated that they provided their physician/nurse with a gift or made a donation to the hospital. Although this figure may be considered low, in the same survey, 19% of interviewees felt that such additional

¹¹⁴ It is not clear whether the nine criminal prosecutions were those relating to cases received in the same financial year or previous years.

payments were necessary after care has been provided (which is 3 percentage points above the EU15 average) (611).

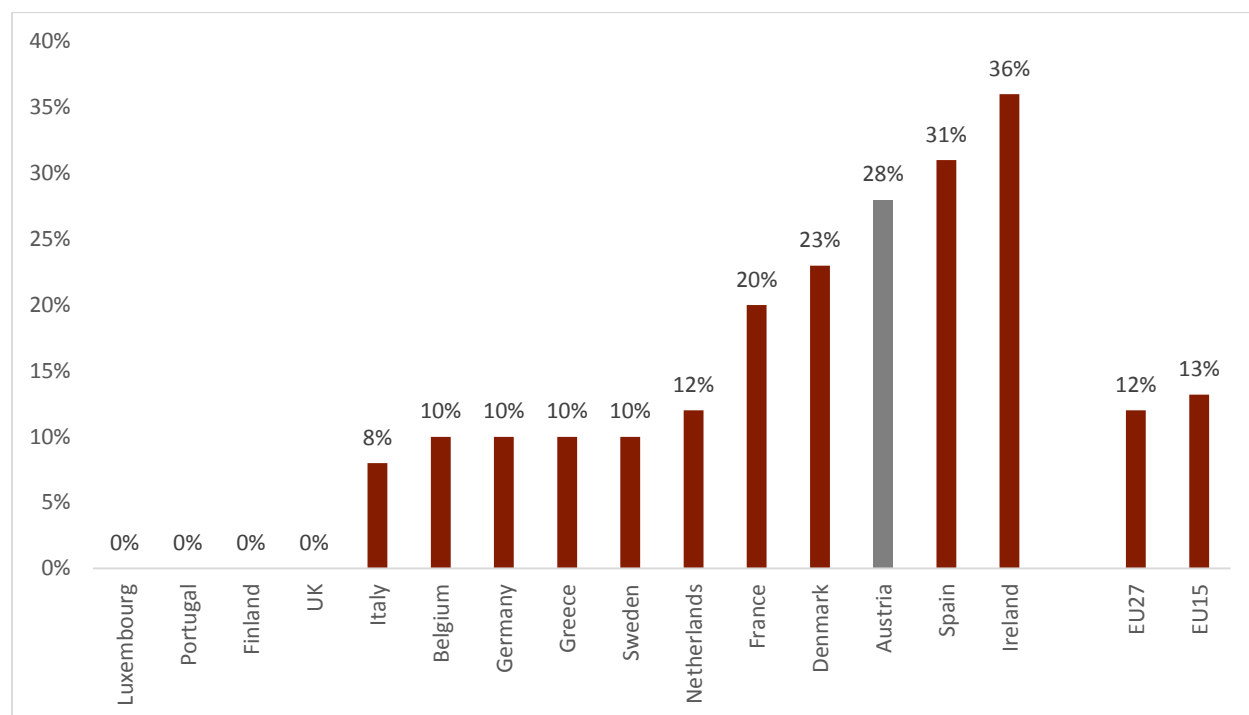
Figure 177: Proportion of interviewees who, in addition, to official fees provided an extra payments or gift to their nurse of physician, or provided a donation to the hospital (2014)



Source: (611)

The second relates to the provision of additional services within private practices in order to be treated within a public facility. In this regard, Austria performed poorly with 28% of interviewees acknowledging that this occurred (compared to 13% across EU15) (611). Caution, however, should be taken when reviewing results. Specifically, the context of the Austrian healthcare system should be taken into account whereby patients have significant access to private specialists; therefore, it is not clear to what extent patients have been encouraged to engage in a follow-up consultation or whether this was asked within the initial consultation, and therefore not considered fraudulent.

Figure 178: Proportion of interviewees who were asked to go for a private consultation in order to be treated in a public hospital (2014)



Source: (611)

In addition, there is anecdotal evidence of various other forms of fraud. However, such claims have not been substantiated. Nevertheless, they are reported as the current environment enables such fraudulent behaviour to occur.

Table 100: Potential types of fraud within Austria’s healthcare sector

Type of fraud	Description
<i>Preferential treatment</i>	Better treatment offered to private patients given physicians receive greater amounts from these patients. Illegal under hospital law (KaKug, paragraph 16).
<i>Working hours</i>	Is it theoretically possible that physicians in hospitals work in a private setting during their dedicated hours at a public hospital.
<i>Contributions</i>	Establishment of fake companies who employ individuals for legal reasons (e.g. so that individuals can access loans).

Type of fraud	Description
	Employees in fact earn money in the informal market, therefore they pay a lower contribution rate than what they actually earn (lower contributions for the same level of benefit).
<i>E-cards</i>	People illegally using e-cards that do not belong to them to access healthcare services. For example, un-registered migrants who do not formally have access to the insurance system.

Strategies to combat healthcare fraud in Austria

Combatting fraud plays an important role in securing the financing system of social benefits, ensuring a comprehensive social protection of the insured, guaranteeing fair competition in the economy, preventing external influences on the social insurance system and maintaining the trustworthiness of the social insurance system (632). Therefore, a range of strategies and initiatives have been implemented in Austria to prevent, detect and prosecute fraud.

For instance, some activities defined as ‘fraudulent’ may arise due to errors rather than actual fraud. In order to prevent misunderstandings, efforts are undertaken by the social insurance to effectively and transparently inform insured persons and contractual partners of their responsibilities. Moreover, to prevent identity fraud and use of services by non-entitled parties, it was ruled that new E-cards will include a photo of the card owner, starting in 2019 (633). To prevent further fraud arising from dummy concerns and to create an overview of the problem, a website was established, which reports all dummy concerns involved in social insurance fraud. However, the collection of data on and monitoring of fraudulent activities to inform policies and to estimate the actual scope of the problem remains a challenge. Therefore, initiatives have been introduced to harmonise the monitoring infrastructure across carriers to support a transparent quantification of fraud in the social insurance system (632).

In order to detect fraud pertaining to the payment of contributions, both the social insurance carriers and finance authorities conduct collective checks on the declaration of income and contributions by individuals. Furthermore, in the area of provider-related fraud, the social insurance has introduced mystery shopping, which is conducted on a random basis, as well as in suspected cases. However, the scope of this strategy remains unknown, as it has only been implemented in 2016 and was countered with

significant resistance by the medical chamber. In addition, the individual carriers aim to increase initiatives for the detection of fraud. For example, the WGKK has established a working group on the detection and prevention of fraud in 2008, which primarily focuses on the submission of false claims by physicians. In 2013, 597 cases of fraudulent or erroneous claims by contracted physicians have been identified, whereby EUR 307,135 were claimed back successfully by the WGKK. Contracts with physicians were terminated in five cases, and in three cases a criminal charge was placed (632).

In order to effectively persecute social insurance fraud, a legal base for the combat of fraud was established recently. This includes the law on Combatting Social Insurance Fraud (Sozialbetrugsbekämpfungsgesetz, SBBG), which came into effect in January 2016 to regulate the combatting of fraud, particularly the evasion of contribution payments, and to strengthen the cooperation between authorities. Furthermore, the law on Combatting Wage- and Social Dumping (Lohn- und Sozialdumping-Bekämpfungsgesetz, LSD-BG) was introduced in January 2017. In addition, the Directives for the Implementation, Documentation and Quality Assurance of Controls of Contractual Partners (Richtlinien für die Durchführung, Dokumentation und Qualitätssicherung von Kontrollen im Vertragspartnerbereich (RLVPK) were established in April 2016. Different authorities are responsible for the persecution of offences. For instance, minor crimes are governed by administrative criminal law and therefore involve the federal and regional administrative courts, as well as the financial police. By contrast, major crimes are dealt with by the Anti-Corruption Agency and the public prosecution department.

The cooperation between national authorities is central to combatting fraud. In addition, efforts have been made to expand cooperation across other countries, in order to exchange best practice examples and analyses pertaining to the combat of fraud on an international level. For instance, Austria is a member of the EU platform on informal labour, as well as the international anti-corruption academy to improve the exchange of data and information (632).

8.3.8 Policy options: Combating healthcare fraud

As previously outlined, comprehensive studies into the extent and cost of fraud within the healthcare system are limited. For example, only two forms of healthcare fraud have been confirmed and quantified. To gain a better understanding of the types of healthcare fraud that exist within the system, and their associated cost, it is recommended that first and foremost, a review of fraud in the Austrian healthcare system be undertaken including all payers, providers and patients. To the extent possible, the cost of healthcare fraud should be quantified, with the final figure used to determine future levels of funding into

anti-fraudulent activities. In the absence of this information, it is difficult to a) prioritise activities, and b) determine an appropriate level of investment.

Federal and Länder governments, and social health insurance could jointly fund the study, given all-inclusive approach to healthcare fraud should be taken.

Finally, we are cognisant of the challenges associated with identifying and calculating healthcare fraud, therefore, as a starting point, it suggested that information be drawn from patient ombudsmen run by health insurance carriers, Chamber of Physicians, as well as patient attorneys implemented at the state level (see Figure 179).

Figure 179: Patient ombudsman within social health insurance

Social health insurance carriers employ patient ombudsman, however, there is no legal provision for them to do so under the ASVG (for example). Ombudsman for health insurance carriers deal with a variety of complaints, however, it is not under their remit to legally represent clients. For example, ombudsman may deal with complaints regarding waiting times or prices. Ombudsman within the Chamber of Physician's performs a similar role.

The only patient ombudsman/attorney to be defined by law is that offered by each Land. Patient ombudsman/attorney's in this context perform a variety of roles including informing patients of their rights, mediating disputes, investigating failures within the healthcare system, and assisting patients when malpractice settlements are made outside of court.

Source: (68)

Once there is a better understanding of the types and cost of healthcare fraud within the system, appropriate strategies, which target problem areas, can be developed. For example, if the problem is significant, a Joint Specialist Centre (should model 4 be employed, see section 4.1.2) or competence centre (under current arrangements) could be dedicated to combating healthcare fraud.

Finally, digitalising patient healthcare records, as is being done under ELGA, improves transparency within the system therefore minimising the possibilities to engage in fraudulent behaviour. For example, ELGA will allow patients to map services that were referred for, actual services performed and services recorded as being completed. Therefore, patients are able to easily identify instances where a physician overbills. Given low co-payments within the system, there is limited incentive for patients to report such behaviour. For this reason, health insurance carriers should encourage insurees to report overbilling, which would

require them to provide relevant links and services on how to report physicians. In addition, as ELGA becomes more sophisticated (e.g. providing information in a digestible format), health insurance carriers will be able to juxtapose healthcare consumption patterns over time for each insuree. This will allow carriers to more easily identify instances of e-card fraud, by juxtaposing past and current utilisation.

Summary of policy options for combating healthcare fraud

To understand the types of healthcare fraud and their associated cost, a comprehensive study into the topic is required. By collecting this information, policy-makers will have a better understanding of where anti-fraudulent activities should be targeted and associated cost-savings. Given the problem is significant, social health insurance carriers could dedicate a Joint Specialist Centre or competence centre to combating healthcare fraud. Finally, enhancing digitalisation within the system will continue to improve transparency and limit the opportunity for healthcare fraud to occur. Given patients can more readily identify instances of healthcare fraud, carriers should encourage insurees to report such behaviour, which may act as a deterrent.

Legal considerations

No particular legal impediments have to be faced with respect to these options.

8.4 Business processes with respect to IT systems

8.4.1 Introduction

The study conducted by Hausermann in 1992 on the organisational analysis of the Austrian social insurance system pointed out that the different EDV should be harmonised and the lack of cooperation among the providers is a central challenge in the context of administrative activities. It was identified as an obstacle that this would initially incur costs to the provider, and that it would not directly benefit them. With the 52nd amendment to the ASVG. The coordination function in the field of automation-assisted data processing was transferred to the Main Association of Social Security Institutions (HVSV) under the 52nd amendment to the ASVG. The guidelines for the cooperation of the social security providers amongst themselves and with the main association in automation-assisted data processing, that were issued by the main association following § 31 para. 5 clause 4 ASVG, intend a step-by-step production of compatible computer structures to the extent that this is necessary for the joint development, procurement and application of the software.

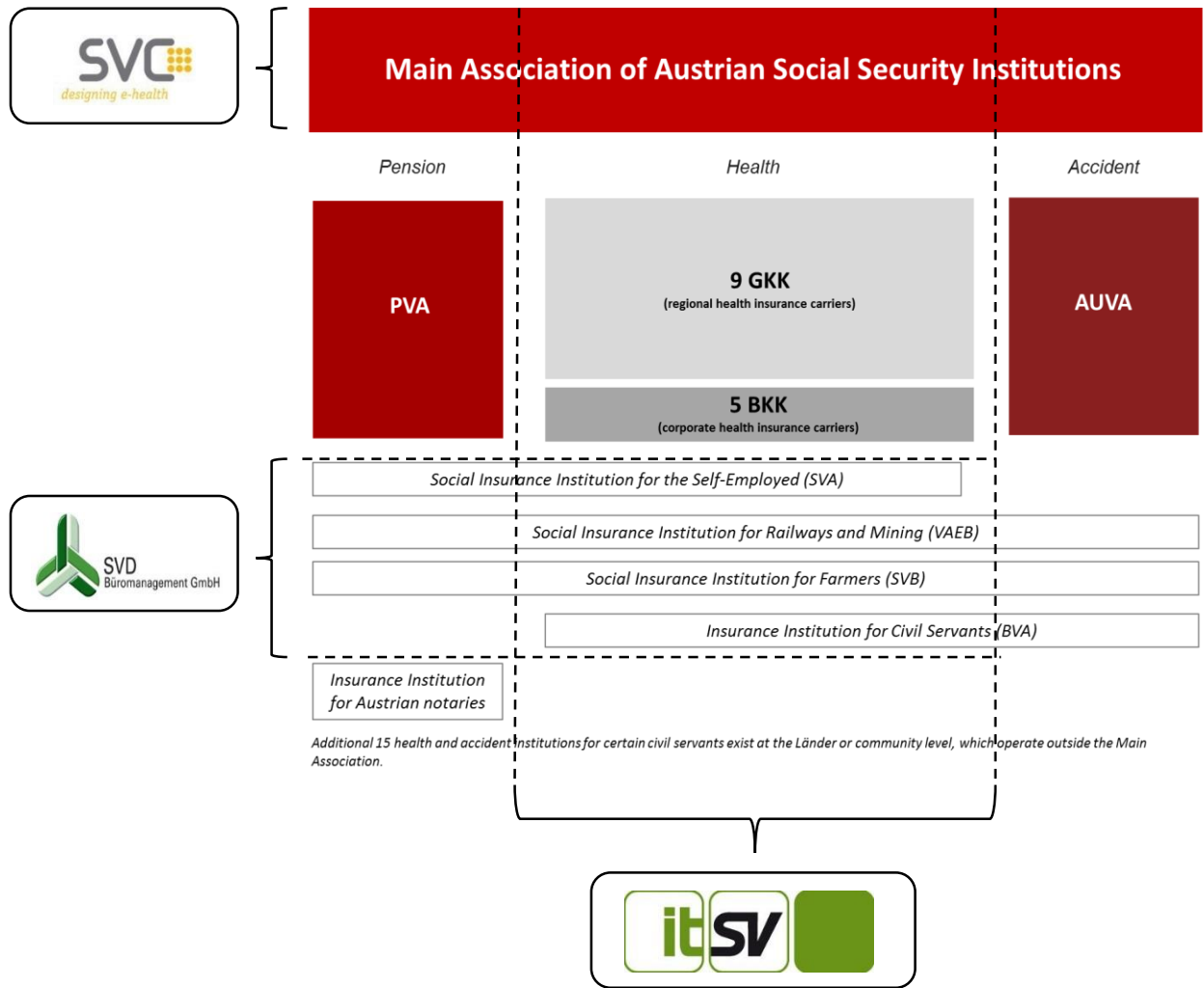
In the study carried out by KPMG Consulting GmbH in 1998, it was stated that due to standard products (IT applications used by several social insurance funds), as well as due to the creation of competence centers, positive examples of harmonisation of computer science were created. KPMG Consulting GmbH also criticised the fact that at the time many synergy potentials across providers remained underutilised since cooperation was based on the individual initiatives of providers and did not always include all providers whose cooperation would be useful. The image has changed considerably in this sector. A collaborative structure was created due to the foundation of subsidiaries across providers, the consolidation of the data centre and a joint IT-management, which contained costs and could reduce parallel tasks.

The following chapter describes the organisations and their division of tasks for electronic data processing, as well as the developments in the IT business processes and work process facilitation through IT solutions in Austria, and considers potential efficiency potentials. Further detailed information on this topic and possible efficiency potentials can be found in chapter 2.5 in Volume 4 – Situational Analysis.

8.4.2 Organisations and their division of work into electronic data processing

The process of the division of labour between the HVSV, the IT services of the social insurance GmbH (ITSV GmbH), social insurance chip cards provider and operator SVC (SVV GmbH) and SVD office management GmbH (SVD GmbH) are based on the binding directives agreed by the HVSV on the cooperation of the social security funds and the main association in electronic data processing (REDV), which are valid for all social insurance funds.

Figure 180: The Austrian social insurance funds including subsidiaries, own research



IT-Services of the Social insurance GmbH (ITSV GmbH)

ITSV GmbH was established at the end of 2004 by the HVSV in accordance with Section 31 (4) 3 lit. A ASVG as the central coordinating company of the main association and the social insurance institutions for the field of information technology.

In accordance with the founding purpose, 20 further social insurance funds other than HVB also participated in the ITSV (HVB, SVA, WGKK, OÖGKK, NÖGKK, BVA, SVB, STGKK, TGKK, SGKK, KGKK, VGKK, BGKK, VAEB, BKK WVB, BKK Kapfenberg, BKK Mondi, BKK Austria Tabak, BKK Zeltweg, BKK Voestalpine). At the time of the foundation of the ITSV GmbH, AUVA and PVA decided not to purchase any owner shares.

Both funds still draw benefits from the ITSV independent from this decision. These include standard products which all funds need in all divisions (e.g. standard product PERS - Personnel Management).

As business purpose and according to point 3.1 of the shareholder agreement, ITSV GmbH was provided with the control and coordination of the IT services, the development of strategies and standards as well as the provision of services for the partners in the areas of information technology and communication under consideration of promoting business efficiency. According to point 3.5 of the shareholder agreement, this objective particularly incorporates the creation of compatible IT structures and the joint software development, procurement and application considering the fundamental principles of business efficiency and practicality.

In a first phase, ITSV GmbH consolidated the 18 computer centres of the social health insurance that existed at the time of the founding period almost completely, in accordance with § 23 (2) no. 1 REDV, into a target data processing centre operated by ITSV GmbH. After the successfully executed consolidation of computer centres of the social health insurance, the focus of the ITSV GmbH is now, according to § 12 REDV concentrated on the coordination of the software landscape of the Austrian social health insurance. The objective of this intervention is cost saving from establishing a license management across providers and from creating joint software engineering architectures. In addition, the IT-controlling across providers is to be supported by the ITSV GmbH and according to § 6 REDV a central project controlling has to be ensured.

In addition, the call centers, which were originally required for internal technical purposes (service-desk system), are increasingly used for important tasks such as breast cancer screening, electronic health care, thus assumes central health policy tasks.

Furthermore, the call centre, which was originally required and established for internal technical purposes (service desk system) across providers, is increasingly also used for important content-related tasks (e.g. breast cancer screening, electronic health record service line, e-card service line for insurees and contract partners etc.) and thus assumes central health policy tasks. In this business area, a cooperation between the Federal Government and ITSV GmbH is currently being developed and strived for, for reducing administrative costs for the federal government and social security. A further co-operation between the Federal Government, the Länder and the social insurance is being pursued in the area of the mutual provision of cost-effective storage space meeting the high-security requirements.

The IT governance model of the IT services of the social insurance GmbH (ITSV GmbH)

IT Governance is an instrument that supports the implementation of the strategic IT goals and aligns the IT with the strategic company objectives. The IT Governance model encompasses the entire IT value chain and applies to HVB, all social insurance providers (except AUVA and PVA), ITSV GmbH and the social insurance chip card company m.b.H. (SVC GmbH) with respect to all company-wide IT issues and also to architecture, infrastructure and standards within each segment. This IT Governance model of the social insurances applies to AUVA and PVA only in the standard product area and ELGA. The alignment of additional IT Governance structures of AUVA and PVA can be undertaken in a further step.

The normative and strategic level is the responsibility of IT management and the operational level that of the IT coordination. The IT strategy applies according to the IT Governance model to social insurance providers (for AUVA and PVA in the case of standard products and ELGA), the HVB and all IT subsidiaries. The IT control is responsible for the creation and further development of the IT strategy. The IT governance model therefore provides a common approach.

SVD Office Management GmbH (SVD GmbH)

The SVD Office Management GmbH (SVD GmbH) was founded in 2003 and has four nationwide insurance providers as owners (BVA, SVB, VAEB und SVA). The SVD GmbH offers a broad range of services to its members such as procurement, facility management, construction industry, printing company and IKT. Even the ITSV GmbH and the SVC GmbH use the cleaning and supplementary facility services of the SVD GmbH at the office locations in Vienna, which could save administrative costs in comparison to previous suppliers. By bundling the services at SVD GmbH, the company was able to build up know-how in the business areas. The SVD GmbH is interested in expanding its services across further providers and to offer the know-how gained more widely. The SVD GmbH supports approximately 4,500 user in the ITK area. Regarding the range of services offered, it should be mentioned that it can be regarded as comprehensive with a few exceptions for the owner providers (in the area of outpatient clinics).

The social insurance chip card provider and operator m.b.H. (SVC GmbH)

The social insurance chip card provider and operator m.b.H. (SVC) was founded by the HVB on the basis of the §§ 31 a bis c ASVG. According to point 1 of the company agreement, the business purpose consists of the introduction, operation and further development of an electronic administration system (ELSY) for the entire social security administration.

The task of SVC GmbH is to make the processes between insurees, service providers, doctors' offices, hospitals, pharmacies, other health service providers, ELGA health service providers, as well as social insurance carriers IT-based to a large extent paperless, to ensure and continuously improve the operability. The SVC GmbH guarantees an availability of 99.7% for the e-card data processing centres. SVC GmbH also operates the Social Security Internet Portal, which receives around 1.8 million hits a month. The main products of SVC GmbH are technological solutions in the healthcare sector. Some examples are the e-card system, ELGA, e-medication within the framework of ELGA or eSV.

8.4.3 Developments in the area of IT business processes in Austria

Harmonisation of IT systems by standard products

Before the harmonisation by standard products, each provider had its own systems in operation. Many operations were carried out parallel because of that. The new philosophy is that applications are developed (for example, by competence centres) and made available to the remaining providers.

With the standard products (STP) / competence centers (CC) across providers, the legacy systems (Host) at the end of the life cycle of providers were/will be replaced and processes will be also standardised. The business processes to the customer are considered across providers, e.g. by eSV ('electronic social insurance') or rather e-innovation. The IT hence creates the basis for the subject area to implement further optimisation measures. Based on the IT master plan, all standard products, their commissioning and releases are controlled for all providers. The IT master plan is used for controlling the project and program management.

The competence centres of providers, the ITSV GmbH and the HVSV are involved in the development of standard applications. The tasks will be assigned to the most suitable body for the project. Given that the competence centres program standard products, it can be guaranteed that the end product meets the required requirements and that the know-how in social insurance can be upheld and does not need to be purchased. This further ensures that the system remains safe and stable, as well as that only a minor dependence on third-party providers. This approach also reduced the number of externally purchased developer by more than half. Know-how can hence be ensured sustainably in the social insurance.

Joint use of data processing centres

The Austrian social insurance has decided to reduce the number of data processing centres step-by-step from previously 18 to maximally 5 data processing centres. Since the end of 2013, 5 physical data

processing centres are run by the Austrian social insurance: Geiselberg, Wienerberg, Neu, AUVA, PVA and SVD.

Furthermore, there is a customer relation to ITSV GmbH and SVC GmbH in the areas SAP, internet connection, web hosting of the website, video calls, MDM solutions for Apple products. The server for the e-card system and eSV (Online presence of all social insurance providers) are operated by the SVC GmbH at the data processing centre location 'Geiselberg' and at the 'T-Centre'.

The IT cost cap

In connection with IT costs, the so-called IT cost cap was introduced in 2008. The result since the introduction of the cost cap is that the IT costs remained nearly constant since 2007 despite massive challenges (roll out of standard applications) and even fell to the lowest absolute value of the last ten years in 2015. The audit division confirms that the overall IT costs only increased by about 1.7% since 2007 and could hence be kept constant. Simultaneously, it could be observed that the proportion of IT costs of administration costs constantly fell (from 17.9%- 2007 to 14.2 %- 2015). This development proves the functioning of the IT cost cap as cost containment instrument.

8.4.4 Developments in the area of work process facilitation through IT solutions in Austria

E-nnovation

A program ('e_nnovation') was implemented between 2014 and 2016 with the objective of providing the insured with a wide range of up-to-date electronic interaction facilities around the clock and via all relevant channels. This facilitated the interaction of the insured and relieved the administration of social insurance funds.

A key component of this programme was 'My social insurance' ('Meine SV'): The internet portal that exists since 01.04.2015, in which all services for insured requiring authentication can be bundled. All Regional Health Insurance Funds, all employer-based health insurances, PVA, SVA and VAEB and from mid-2017 also SVB and BVA currently participate in 'Meine SV'.

A further relevant topic for IT support and facilitation of work processes is Cognitive Computing: Cognitive Computing describes technical platforms, which are based on the scientific disciplines of artificial intelligence and through which computer programmes can act in a similar way as the human brain. In 2017 it is planned to carry out a tender for cognitive computing, so that from 2018 concrete implementation projects can be carried out.

The electronic medical record (ELGA)

The electronic medical record (in short ELGA) is a joint project of the federal government, the social health insurance and all federal states. ELGA has the objective to connect the health data of patients and to create a location- and time-independent access to ELGA health data through the ELGA portal. Detailed information about this topic can be found in section 6.6.

Accounting of medicines (HEMA)

The 'Accounting of Medicines' HEMA operates the accounting of the public pharmacies and the primary care pharmacies. The basis for the accounting of pharmacy data are the electronic data of the public pharmacies, which are transferred by the general salary fund of Austrian pharmacists (Pharmazeutische Gehaltskasse für Österreich) to the HVSV.

The division into the corresponding insurance providers occurs through the HVSV. Data is sent to insurance providers via the data hub (DDS). The data of the pharmacies submitted electronically (via data media or ELDA) or in paper format. The master data (physicians, insured, reimbursement code- EKO) will be played in once per month. The administration of pharmacy master data occurs in HEMA.

The HEMA data will be transferred in further dispositive systems (BIG, FOKO, LIVE, ALVA Insurance) for various analyses and evaluations. In HEMA, a prescription economy evaluation can be made (frequency of prescription medicines, quota of generics, contract partner control). The evaluations of the prescription economy are transferred to the providers. Further, it is up to the providers to decide whether they contact their contract partner and point to possible peculiarities. All evaluations are risk- and age-standardised. The data of HEMA can also be used as basis for buying decisions, but there are no procurement functionalities.

Reimbursement of optional physician

Patients have the right to submit bills of optional physicians. A technical solution about 'My SV' is already in use at most health insurance providers. Currently, the diffusion is supposed to be increased through an information campaign.

As basis for an automatic cost reimbursement, online services for cost reimbursement for regional health insurance funds were already created in 2015: The insured can transfer bills to the responsible social insurance provider as PDF online for the reimbursement. An important prerequisite for an automatic bill of optional physicians, which is that data must exist electronically, is hence satisfied.

8.4.5 Potential efficiency potentials

The IT of the social insurance experienced in the last years and will also in further future a strategy of consolidation, both regarding costs and processes, which are constantly becoming standardised and jointly usable for the joint needs of social insurance providers. After all, the social insurance managed to perform this big IT transformation mainly with the engagement of its own employers. According to this, the potential for efficiency gains is identified and already being implemented

Expiration data transfer (e.g., application) between the providers

Insofar as applications and data transmissions are not already submitted electronically by the applicant (insured, employer and contract partner), applications are electronically recorded and / or forwarded to the responsible provider.

Through the universal service, applications, notifications and notifications can be submitted to each insurance institution, in any state, irrespective of the actual jurisdiction. All insurance providers that are organised according to the general ASVG as well as the Social Insurance Institution of the commercial economy and the Social Insurance Institution of the farmers participate in the universal service. The data hub is available for the electronic transfer of data between social insurance providers. It standardises the communication channel between the involved IT products. The data hub takes care of the ordered technical data communication, but the organizational processing is within the competence area of the individual partners / providers. In the area of rehabilitation as well, particularly in the case of rehabilitation allowances, the processing between the PV and the CP is now largely electronic.

There are applications of the electronic act at almost all providers, albeit with a different focus. The NÖGKK, for example, has implemented the contract partner record, the medical record and a customer record electronically, the PVA the personnel record and the patient record and the TGKK has implemented a regress and legal record electronically. The transferability of the applications for the electronic act is secured through the application of standard products. Particularly in this regard the STP ECM (Enterprise Content Management) should be noted: The majority of work processes that occur at the social insurance are document- and information-driven.

The solutions for the ECM cover the processes of recording, administration, storage, preservation and provision of documents and their contents for the support of professional as well as organisational processes. With an overall concept, different ECM activities and ECM projects will be implemented in the years 2016 to 2018, and technological aspects as well as the independent single solutions will be

strategically bundled. There exists also the possibility for a better coordination and coordinated procedure.

IT-Strategy

Within the framework of the IT governance model, the IT strategy is defined as an essential component of the IT governance. It is the responsibility of the IT control team to develop those under consideration of relevant environmental conditions. Starting from the defined scope of the IT governance, the IT strategy is valid for all SV providers (for AUVA and PVA in the case of standard products and ELGA), the HVB and all IT subsidiaries. The IT-strategy is influenced by different environments such as the strategy of the social insurance, developments in technology, framework conditions, etc., but also by findings from the control mechanisms of the operative implementation of the strategy. An examination and potentially adaption of the IT strategy and hence also of the guiding principles is to be executed regularly.

The electronic management system (ELSY) implemented by the ASVG §31a is already designed as efficiency model by the legislator. Its objective is to consolidate processes between social insurance providers and the 'outside world' (insured, employer, contract partner, health care provider). The efficiency potentials have been identified and remain to be increased. A challenge in the increase of efficiency potential is the coalition pressure with the contract partners through which sensible process changes can be blocked for general political reasons.

Digitalisation of administration tasks in the social insurance

Through the use of standard products and provider-internal workflow and software support, a large number of social insurance companies could be digitized and thus structured cost-efficient.

The main focus in digitalisation lies now with the processes with insured and contract partners. The initiatives of 'My SV' and the further expansion of e-card functionalities (eBS, e-medication, e-prescription, etc.) with physicians, pharmacies, hospitals and other contract partners serve this purpose. Efficiency potentials exist mainly in administration processes in this area, which can be digitized. To increase these potentials, the agreement of the contract partners needs to be obtained.

The internal administration processes run mainly electronically. For example for:

Standard products FIWI (Finance and economy of the social insurance providers):

Already digitised:

- Transmission of orders, material lists of supplier to the social insurance provider

- Work flow supported audit and approval and release processes within social insurance funds

To be digitised:

- Transmission of electronic bills of suppliers to the social insurance providers
- Exchange of electronic bills between social insurance providers.

Standard products PERS (Human Resources):

Already digitised:

- Use of ESS (Employee Self Service) and MSS (Manager Self Service) scenarios to support of business processes between employers and managers or rather employers and the human resource department

To be digitised:

- Administration of applicants across providers.

Enterprise Content Management (ECM):

The following institutions use ECM (Enterprise Content Management):

Regional Health Insurance Funds:

- Burgenländische Gebietskrankenkasse (Burgenland)
- Niederösterreichische Gebietskrankenkasse (Lower Austria)
- Kärntner Gebietskrankenkasse (Carinthia)
- Oberösterreichische Gebietskrankenkasse (Upper Austria)
- Steiermärkische Gebietskrankenkasse (Styria)
- Tiroler Gebietskrankenkasse (Tyrol)
- Vorarlberger Gebietskrankenkasse (Vorarlberg)
- Wiener Gebietskrankenkasse (Vienna).

Special Insurance providers:

- Social Insurance service for commerce and industry (SVA)
- Pensionsversicherungsanstalt (Pension Insurance)
- Social insurance institution for farmers
- Austrian railways insurance institution

- Public Servant Insurance Corporation
- Main Association of Austrian Social Security Institutions
- ITSV GmbH.

In addition, there are solutions implemented in SAP, SharePoint or other technologies. The complete alignment of workflows is difficult to implement due to different internal processes. Depending on the provider size, the work sharing is differently pronounced. An adjustment of the workflow systems is not possible without the alignment of the internal organization.

Automatic difference assessment/reimbursement of contributions

The different assessment/reimbursement of contributions are relevant in the area of multiple insurance. A multiple insurance in health insurance occurs when one exercises multiple employments that are subject to compulsory insurance simultaneously and/or receives cash benefits, which are also connected to health insurance. An automatic solution would result in a facilitation of processes for the insured. Currently, professional questions are being clarified concerning this matter. Both is technically possible and partly already exists (reimbursement of contributions in the ASVG in STP-MVB). The effort can currently not yet be estimated.

Reimbursement of the optional physician

As basis for an automated cost reimbursement, online services for cost reimbursement for the Regional Health Insurance Funds were already created in 2015. One can expand this process even further. In addition, additional requirements or rather alternatives for an automatic optional physician bill will be evaluated:

- Treatment of the incoming PDF bills by means of OCR (text recognition) to transform the picture of the bill into characters
- Replication of activities that are currently carried out by the administration employers in a suitable software; this is a potential area of application for cognitive computing
- Obligation of optional physicians to collect the data that is necessary for the reimbursement (requires the nationwide cooperation of optional physicians and is hence not feasible in the short-run and just by the social insurance)
- Imprint of a QR code on the related forms so that they can be automatically assigned to a health insurance provider; if the form is filled out online by the insured, the QR code could even contain this information.

The automatic optional insurance bill is online accessible since April 2015 and currently generates 50.000 access monthly. In Vienna, circa 25% of optional physician bills are processed online.

In total, it can be stated that in the area of EDV significant advancements towards a standardisation and an intensified coordination have occurred. There exist further efficiency potentials, which can be increased.

Currently, the issue of a joint licence management is processed, which one could have probably already started earlier. Among the individual EDV companies, the coordination and the division of work could be developed further since here tasks are partly administered or rather executed parallel. In the area of the Regional Health Insurance Funds, this occurs through the IT SV, at the special insurance provider through the SVD and at the AUVA and PVA independent.

Further, the EDV effort could be reduced if the individual organisations standardised the internal processes before the implementation of standard products to be able to reduce the complexity of the EDV applications.

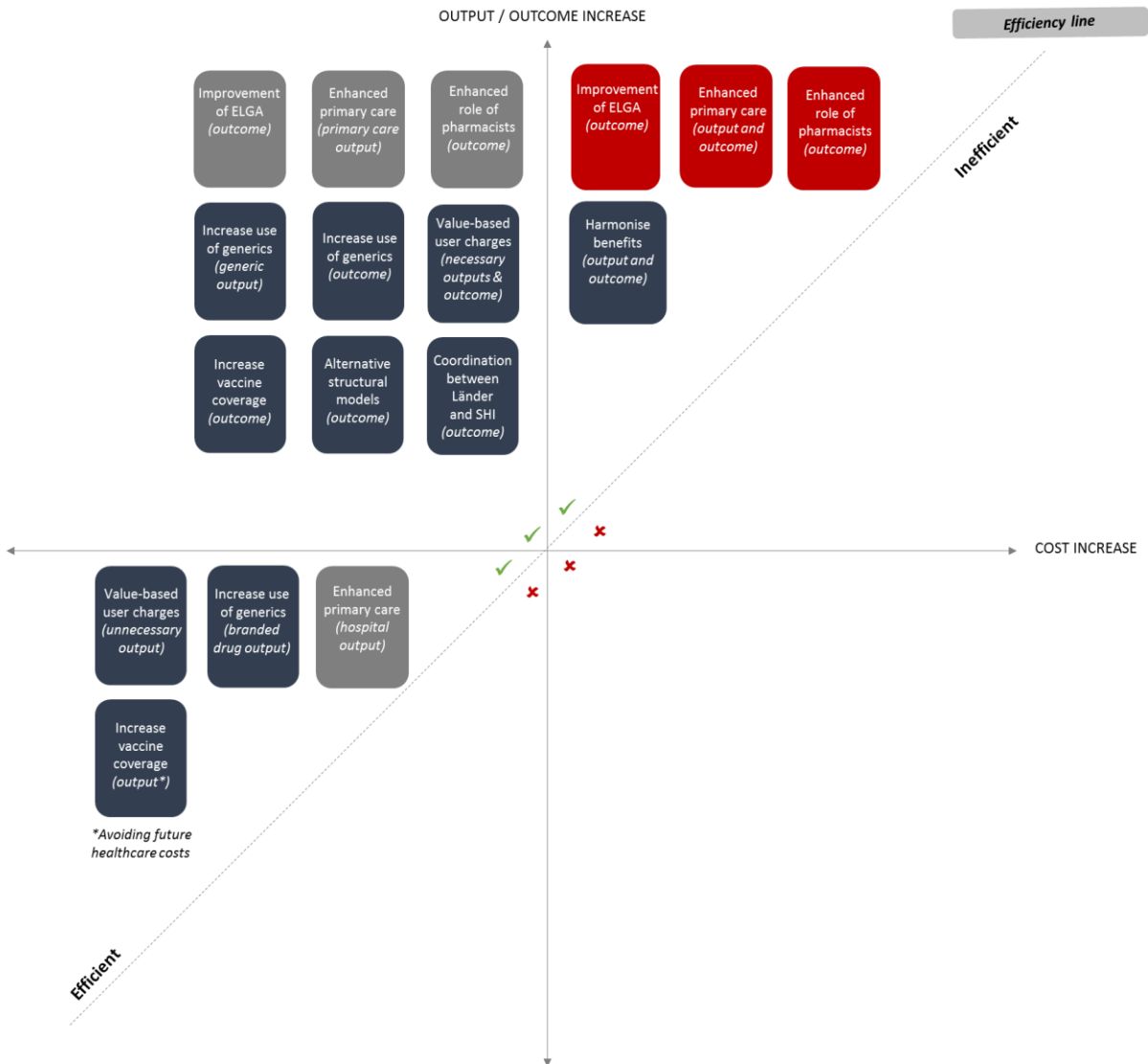
9 Conclusion

A review of the Austrian social insurance system revealed that the system is both complex and fragmented due to multi-level governance structures and dual financing arrangements. This finding is not unique to this review, as evidenced by numerous reports undertaken by Austrian institutions and organisations who also come to this conclusion. In response, policy-makers in recent years have implemented various policies to enhance coordination and align incentives. These efforts should be recognised and commended, however, ultimately, major constitutional reform, enhancement of joint responsibilities between social health insurance and the Länder, or joint budgets are required to streamline the healthcare system. Given the extreme difficulty in passing such reforms, this review has chosen to take a pragmatic approach by developing a range of policy options to improve efficiency and equity within the current system.

Policy options have been designed to increased efficiency, equity and possibly outcomes within the Austrian social insurance system. As an example, key policy options to enhance the use of generics, primary care and vaccinations, as well as harmonising benefits, introducing value-based user charges, enhancing the role of pharmacists, and improving coordination between states and social health insurance have been mapped on a cost-efficiency plane (please see figure below).

The figure outlines the medium- (red box) and long-term (grey box) impact of each of the aforementioned policies has on cost, outcomes and outputs (navy blue boxes indicate both medium- and long-term). This exercise demonstrates that each of the options put forward are, theoretically, efficient, given they fall to the left of the efficiency line. For example, enhancing primary care will increase outcomes, outputs and costs within the medium-term, however, in the long-term, this policy will reduce costs by decreasing the number of inpatient admissions.

Figure 181: Cost-efficiency plane



Note: Red boxes = medium-term, Grey boxes = long-term, Navy blue boxes = medium- and long-term.
 Source: Author's own creation

It is important to highlight that the remit of this review was limited, given it was restricted to the social insurance system. However, given the complex nature of the healthcare system, where directly applicable, consideration was given to healthcare under the jurisdiction of federal and Länder governments.

Finally, and as previously stated, when developing future options to enhance efficiencies within the healthcare system, policy-makers and stakeholders should:

- Ensure that development and implementation of policies is transparent and inclusive.
- Be aware that no healthcare system is perfect, and that any changes should build upon strengths within the current system.

The remainder of this chapter outlines, at a high-level, a range of policy options to enhance efficiency within the system. For detailed information on each policy option, it is highly recommended that readers view the relevant sections within the main body of the report.

For each topic, multiple policy options have been provided, further, no option has been ranked as superior given, ultimately, it is the responsibility of Austrian policy makers and stakeholders to make decisions regarding the direction of the healthcare system, however, we briefly outline several advantages and disadvantages of different options. Finally, we recommend that policy options within this report are viewed in conjunction with previous research undertaken by Austrian experts, as well those outlined by stakeholder views in Volume 3 of this review.

9.1 Policy options: Structure of the social insurance system

Four alternative models have been proposed to improve efficiency and equity within the system. Models 1-3 involve structural change to the social insurance system through an amalgamation of carriers. Amalgamation, in the short-run, can lead to cost increases given the expenses associated with structural change and implementation. However, in the medium- to long-term, if implemented correctly, these models could lead to efficiency gains, for example, through economies of scale and scope, and enhanced knowledge transfers. It is important to note that sub-options for models 1-3 have also been developed, however, they have not been included in this summary (please see section 4.1.2 for further details on these sub-options). Model 4 could increase efficiency and equity by extending risk-adjustment and enhancing coordination within the current structural model.

- **Model 1 (partial amalgamation):** one national accident insurance carrier, one national pension insurance carrier, one employed health insurance carrier (GKKs, BVA, VAEB, BKKs and KFAs) and one self-employed health insurance carrier (i.e. SVA and SVB)
- **Model 2 (limited amalgamation):** one national pension insurance carrier, one self-employed health insurance carrier, one employed health insurance carrier (excluding civil servants, i.e. BVA, VAEB and KFAs), one accident insurance carrier (excluding civil servants), and one joint accident and health insurance carrier for civil servants
- **Model 3 (health and accident amalgamation):** one national pension insurance carrier, one health and accident insurance carrier divided by each of the nine states
- **Model 4 (insurance coordination):** model 4 aims to improve the current social insurance system by enhancing risk-adjustment between health insurance carriers, as well as improving coordination between carriers through Joint Specialists Centres. Joint Specialist Centre ‘themes’ would be defined by a joint Working Group (including HVSV, and both the Ministry of Health and Women’s Affairs, and the Ministry of Labour, Social Affairs and Consumer Protection), however, it will be the responsibility of carriers who takes on each theme. Although not compulsory, carriers will be incentivised to actively participate in the scheme to minimise duplication.

9.2 Policy options: Risk-adjustment

Given model 4, as outlined above, is introduced, the following five risk-adjustment options have been proposed to improve equity and efficiency within the system. RA1 and RA2 are considered the most comprehensive and thus mutually exclusive, RA3-5, however, could be implemented in unison.

- **RA1:** All funds received by social health insurance carriers to be risk-adjusted through a central agency (i.e. HVSV). Alternatively, a step-wise approach could also be considered, whereby the proportion of funds risk-adjusted are increased over time until it is felt there is an equitable distribution of funds.
- **RA2:** This option would involve a simultaneous reduction to contribution rates and the implementation of an earmarked levy dedicated to risk-adjustment across social health insurance carriers.

- **RA3:** RA3 would amalgamate existing risk-equalisation schemes into one pool of funds to be used for risk-adjustment purposes. Using the most recent data, risk-equalisation schemes amount to €3 billion annually (including the Hebesätze, or €1.4 billion, excluding the Hebesätze).
- **RA4:** Under this option, social health insurance carriers would subsume responsibility for hospital outpatient departments using an appropriate level of funds from State Health Funds. A central agency (i.e. HVSV) would be responsible for redistributing funds to carriers based on a range of risk-adjustment factors. Funds could be used, for example, to enhance primary care and hospital outpatient departments.
- **RA5:** Finally, RA5 would pool a proportion of contributions into a central fund (managed by the HVSV), which would then be used to reimburse GPs on a capitated risk-adjusted basis. Given the significant cultural change associated with this policy (i.e. by registering with one GP), this policy is should only be considered in the long-term.

See section 4.2.7 for further details.

9.3 Policy options: Collection of contributions

The following policy options relating to the collection of contributions are provided below:

Collection of contributions

- **Base SVB contributions on actual income:** a shift in taxation base towards actual income promotes an alignment between BSVG and ASVG funds in regards to the collection mechanism of contributions, and improves equity in the financing system.
- **Introduction of a proportional fiscal system with maximum contributions in the SVB:** a shift from the regressive to a more proportional fiscal system in conjunction with the introduction of a maximum contribution amount could promote a more equitable collection of contributions, which can be rendered fiscally neutral.
- **Aligning the BVA contribution base with that of regional carriers:** lower BVA's employee contributions, whilst raising employer contributions to harmonise the collection of contributions across funds, which could be rendered fiscally neutral. Gradually lower user charges for BVA insured to the regional fund level (GKK) to foster equity in the collection of contributions across funds.

Multiple insured persons in Austria

- **Single collection of contributions without a choice of carrier:** introduce a single location for the collection of contributions, in addition to keeping maximum contribution bases in place. This can either be in the form of an independent entity or by nominating regional funds to collect contributions on behalf of all funds, in order to simplify the administration process. As such, the refund for excess contributions could be automatically calculated through an official channel, without the need for manual applications. An absolute hierarchy, or a hierarchy based on the main income source of an individual could be introduced to determine the carrier membership of an individual. Further studies on the financial impact on carriers need to be conducted prior to application of this option.
- **Single collection of contributions with a choice of carrier:** *similar to the option presented above,* with the main difference that insured persons could choose their carrier of preference, based on their professions. While this option does not entirely eliminate inequity in the system, it may reduce the former, as insured could only switch carriers on an, for example, yearly basis, rather than intermittently charging different carriers.
- **Multiple collections of contributions without a choice of carrier:** insured individuals continue to pay to multiple carriers, however, the insured would be automatically assigned to a default carrier. This constitutes the carrier for which the insured pays the largest share of contributions and the insured is only entitled to benefits of the default carrier. All carriers receiving contributions for the insured would re-direct these contributions to the respective default carrier. In addition, the refund process for excess contributions could be automated, in order to reduce the administrative burden of manual applications and to eliminate inconveniences to the insured.
- **Multiple collections of contributions with a choice of carrier:** similar rationale to the option presented above, with the main difference that individuals have the option to choose a default fund to access services from, while the second carrier will conduct transfers of funds to the former. However, this would only lead to partial improvements in equity.
- **Retrospective payments between carriers:** one of the carriers conducts retrospective payments to the second insurance carrier, which was predominantly used by the insured person to access services. This system constitutes a modification of the current mechanism in that it adds a compensatory mechanism to ensure the financial stability of funds. However, it must be noted that

this option may be more difficult to implement and does not render the system more equitable. See section 5.1.8 for further details.

9.4 Policy options: Defining and harmonising benefits

The following the policy options to define benefits within the healthcare system are proposed.

- **Outpatient drugs:** disclosure of outpatient drug assessments would render the current process more transparent.
- **Inpatient drugs:** enhance and strengthen coordination and procurement policies across regions and introduction of a transparent decision-making process for inpatient pharmaceuticals.
- **Establishment of an independent, arm's length HTA body:** transition into an independent, arm's length HTA body that undertakes HTA for different types of technology and provides advice to relevant decision-makers in order to increase transparency.
- **Promote a full HTA for a subset of technologies,** particularly those that have important resource implications (high cost/high volume). Formal evaluations should be introduced across costly technologies and a threshold for this purpose should be established.
- **Establish clear parameters regarding the conduct of HTA,** such as type of evidence requirements and the types of evidence that can be admitted into assessment and appraisal.
- **Provide guidance on** methods of assessment and criteria (beyond costs and effects); the role of stakeholder involvement; the appeals process and associated timelines; timelines for assessment and re-assessment for rapid reviews, full HTAs and multiple HTAs; and, the monitoring and implementation of decisions.
- **Provide information on** the structure and composition of the relevant committee (technology Appraisal Committee – TAC), which needs to reflect the stakeholder complexity in the context of each technology type and the national-regional-local trade-offs that exist in different circumstances.

The following the policy options to harmonise benefits within the healthcare system are proposed.

- **Estimated cost of harmonising a specific set of benefits:** initial costs of a harmonisation for specific goods and services (i.e. medical aids and therapeutic devices; dentures; health care services including psychotherapy, physiotherapy and logopedics) were estimated by increasing the per

capita expenditure levels of those funds that are (1) below the average per capita expenditures across all funds and (2) below 70% of the highest per capita expenditure across all funds. **Total additional costs per year of harmonising specific benefits across all funds:**

- (1) €171.075.130 (Risk-adjustment (age and gender) for medical aids and therapeutic devices: €176.988.291). Percentage change in expenditure of SHI for these benefits: ↑19.4% (↑20.1).
- (2) €390.177.440 (Risk-adjustment (age and gender) for medical aids and therapeutic devices: €394.090.543). ↑42.8% (↑43.6).
- While this study provides initial cost calculations, the harmonisation of benefits is a political decision to be taken by the government and stakeholders. Even though a harmonisation of benefits is central to ensuring equity, it is noteworthy that Austria has one of the lowest levels of unmet need in Europe.
- **Data collection:** a unified collection of high-quality data that is comparable across funds is of central importance to supporting the harmonisation of benefits. Further efforts are required to ensure uniform data storage and structure.
- **Financing options** in the case of a political decision to harmonise benefits:
 - (1) Partial funding could ensue through a risk-adjustment scheme, or enhanced risk-adjustment scheme
 - (2) Alternatively, or in addition, government funds could be directed to insurance carriers that offer a slightly less comprehensive benefits package compared to other funds.
 - (3) Further funds could be directed to the project by improving efficiency in the system. For instance, a reduction in hospitalisations could lead to significant savings. However, significant investments in outpatient and primary care are required in the first instance to maintain high-quality care, whilst simultaneously reducing hospital admissions, meaning that savings to be used for a harmonisation could be generated in the mid- to long-term.
 - (4) In addition, better coordination and consolidation could also lead to efficiency gains, which could be directed in the form of savings to increase coverage of benefits in Austria.

See section 5.2.6 for further details.

9.5 Policy options: User charges

The following policy options to enhance efficiency and equity via user charges have been proposed. Please note, none of the policy options recommend an increase in user charges, rather a change in their composition to maximise efficiency within the system.

- **Pharmaceutical cap:** under this option, the universal 2% net income pharmaceutical cap would be replaced by a three-tiered cap, with insurees being allocated to caps according to their total income. Those in the lowest income band would be subject to a lower cap (i.e. 1.5%), middle income earners would see no change in their cap (i.e. remain at 2%), while high-income earners would see their cap increase to 2.5%. Depending on the success of the cap, consideration could be given to expanding the cap to all inpatient and outpatient healthcare services.
- **Value-based user charges:** once a robust HTA system is in place, it is advised that rates of user charges be linked to HTA findings, with insurees paying less (or nothing) the more effective a product/service is. Ideally user charges would take into account individual circumstances, however, this is associated with high-levels of administrative burden. Therefore, it is recommended that value-based user charges be linked to the effectiveness of products/medical devices/services (i.e. inverse relationship between effectiveness and co-insurance/payment rate). In the interim, policy-makers could encourage 'softer' value-based user charges, following the lead of the SVA and VAEB.
- **Convergence of user charges to the lowest level:** finally, it is recommended that current trends continue by encouraging convergence of user charges across health insurance carriers to improve equity within the system.

See section 5.3.8 for further details.

9.6 Policy options: Investment in healthcare services

Three policy options to enhance investments in healthcare services are proposed. These relate to accounting practices, reserves, and whether carriers should make or buy healthcare services.

- **Accounting:** to improve clarity, it is recommended that carriers only term liquid assets as 'reserves', that is, monies which can be used for investment purposes.
- **Enhance use of reserves:** to improve access to healthcare services for all, it is advised that the use of reserves be enhanced, for example by: a) pooling all or a part of a carrier's contributions into

one fund for investment purposes (e.g. to enhance primary healthcare), b) encourage joint investment across carriers (without pooling reserves), or c) encouraging carriers to open up their facilities to all individuals, not just their insured population.

- **Make or buy:** before investing in healthcare services, carriers should be encouraged to undertake a comprehensive analysis before investing, to determine whether it is most appropriate to make or buy (or concurrently source). However, to improve capacity within each health insurance carrier, it is encouraged that carriers invest, at least partly, in their own healthcare services.

See section 5.4.3 for further details.

9.7 Policy options: Broadening the social welfare base

Austria is a strong economic performer, with a relatively high level of employment and GDP per capita. Economic growth is expected to grow over the next few years, however, consideration should be given to current and future challenges facing the economy including an ageing population, and a rise in self-employment, digitalisation and automation. Based on these challenges, the following policy options have been developed to ensure sustainability of the social insurance system.

- **Education and skills:** Align education with future skills required within the workforce, and encourage lifelong learning.
- **Retirement policies:** encourage further efforts to increase the actual retirement age (i.e. encourage people to stay in the workforce for longer).
- **Workforce participation:** continue efforts to increase the proportion of women working within the formal economy.
- **Taxation policies:** after 'softer' policy options, as those outlined above, have been introduced, consider changes to the tax system if further funds are required. Specifically, by using total income as opposed to earned income as the basis for contributions, raising company contributions, and/or introducing additional earmarked health taxes.

See section 5.5.4 for further details.

9.8 Policy options: Contractual agreements

To improve efficiency within the healthcare system via a change to contractual agreements, the following policy options are recommended. These policy options have been broken down according to broad timelines, which reflect their relative importance.

Short-term:

- **Arbitration:** to ensure a level playing field during contractual negotiations, the following option is proposed; allow the Federal Arbitration Committee to postpone the termination of contracts from three to six months, after six months an external arbiter would be introduced to facilitate negotiations. Given no agreement is reached, the Ministry of Health and Women's Affairs would set the contractual agreement based on feedback from the external arbiter.
- **Selective contracts:** If certain items cannot be agreed upon in the general contract, allow social health insurance carriers to selectively contract (e.g. to fill physician vacancies).
- **Structural plans:** if current regional structural plans fail to achieve their desired objective, it is advised that an independent committee be developed to provide recommendations on the number and locations of physicians. Recommendations would form the basis of contractual negotiations, with a requirement to justify any deviations to the Ministry of Health and Women's Affairs.
- **Harmonisation among specialists:** Harmonise naming of services/items across outpatient specialists to improve transparency.
- **Primary and outpatient care:** given the high number of hospital admissions, it is clear that primary care within the healthcare system requires improvement. Multiple policies could be introduced to achieve this, for example, by encouraging group practices, primary healthcare units, and extending hospital outpatient departments and disease management programs. It is important to note that efficiency gains from enhancing primary care are only realisable in the medium- to long-term given fixed supply-side costs within the inpatient sector (e.g. buildings, labour).

Medium-term:

- **Bundled payments:** to enhance coordination and continuity of care, social health insurance and Länder could implement joint budgets for chronically ill patients who frequently access healthcare services. Such an approach would avoid patients 'wandering' the system and ensure that appropriate care is provided.

- **Rural and remote GP remuneration:** to increase the number of physicians working in rural and remote areas, it is recommended that GPs in these areas be paid on a risk-adjusted capitated budgets, which takes into account the unique circumstances of working in these areas. To further incentivise physicians, flat rate payments could be introduced to complement capitated budgets, such payments should be linked to actions/services that promote overall improvement in healthcare quality (e.g. smoking cessation programs).

Long-term:

- **GP remuneration:** if the capitated system amongst rural and remote GPs is successful, consideration could be given to extending the scheme to urban GPs, who would also receive additional flat rate payments.
- **Role of GPs:** it is recommended that the role of GPs in the healthcare system be enhanced to relieve the burden placed on inpatient care, specifically, by encouraging individuals to register with a single GP who would take responsibility for the individual's overall healthcare plan. Such a system would be voluntary, and only realisable once appropriate structures and processes have been put in place (e.g. more advanced GP training, greater number of GPs).

See section 6.3.8 for further details.

9.9 Policy options: Healthcare quality

Policy options to improve healthcare quality within the system have been grouped into three categories. First, changes to the role ÖQMed, second, changes to data availability and quality indicators, and third, changes to hospital admissions, readmissions and discharge management.

In regard to the **role of ÖQMed:**

- Retain ÖQMed and create an additional independent quality committee responsible for monitoring the quality of care among contracted and non-contracted physicians.
- Relocate ÖQMed to the Ministry of Health and Women's Affairs, and give the organisation control over monitoring the quality of care among contracted and non-contracted physicians.
- Maximise the value of data collected through quality indicators through, for example, providing physician feedback and sharing best practice principles.

In regard to **data availability and quality indicators:**

- Develop a coding system for outpatient diagnosis, this would allow outcome indicators to be implemented.
- Increase focus on outcome indicators, and where possible link them to aligning process indicators.
- Link quality indicators across all levels of care to develop patient pathways.
- Allocate responsibility for developing and implementing indicators to the relevant professional group within the Ständiger Koordinierungsausschuss. However, any new indicators should be developed in consultation with the medical community.

In regard to **hospital admissions, readmissions and discharge management:**

- Research is needed to investigate the causes, as well as clinical and policy implications, of high rates of hospital discharge and readmission in Austria (outside remit of this review).
- In order to outbalance political benefits and costs, federal government funds to Länder should be based on objective criteria that reflect the needs of the population.
- Apply additional pressure from the financial targets within the *Zielsteuerung Gesundheit* and the stability pact (i.e. using real values instead of nominal values).
- Austrian Structural Health Plan to base its forecasts on epidemiological data and best practice of service provision, rather than using current demand as a proxy for need
- Further integrate secondary care units in the outpatient sector with primary and hospital care
- In regard to payment of care, for hospitals, the LKF system could be linked to quality of care, while in the first instance, a DRG system within the outpatient sector is advised, given this would improve information on patient pathways. Finally, and as previously mentioned under 'medium term' contractual agreements, bundled payments using funds from a joint budget (between Länder and social insurance) could be introduced, with pilots first being run for multi-morbid, high cost patients.

See section 6.4.6 for further details.

9.10 Policy options: Demand and supply of physicians

Policy options to increase the availability of physicians include:

- **Improving work-life balance** for both male and female physicians, especially in regard to child and elderly care (with a specific focus on those working in rural and remote areas).
- **Reducing incentives for physicians to emigrate**, for example, by providing clarity over future work conditions, ensuring working conditions are compatible with those abroad in regard to hours worked and reimbursement.
- **Reducing the ‘brain drain’** occurring during the transition phase between medical school and professional training, for example, by improving training programs and ensuring these programs are allocated sufficient time.
- **Checking if working time directive compliance necessitates prolongation of training periods**, especially for specialists who need also dexterity, not only knowledge.

Policy options to increase the productivity of physicians include:

- **Improving the reputation of physicians working in primary care**, for example, via additional GP training requirements to fulfill their responsibilities within newly established primary healthcare units.
- **Delineating physician roles** within primary healthcare units and those performed within a hospital outpatient department.
- **Free-up time of physicians** by allocating relatively ‘low-skilled’ tasks to other healthcare professionals (such an approach may require additional education training for other health care professionals). **Training and motivating existing professionals to adjust to re-allocations of tasks and responsibilities** given the number of physicians nearing retirement age.

See section 6.5.3 for further details.

9.11 Policy options: Monitoring and information needs

The following policy options relating to e-health are provided below:

- **Synergy potentials in data storage**: identify synergy potentials between data storage sites, while avoiding the construction of new sites, in order to make efficient use of existing capacity.

- **E-prescribing and recall system:** introduce automated electronic prescribing and a recall system for medical adherence to reduce prescribing-related errors, while concurrently improving control of prescriptions, reducing time spent on prescription queries and promoting continuity of care.
- **E-vaccination:** implement an e-vaccination application with a recall system in order to create an optimised overview of immunisation status and vaccination schedule, whilst preventing duplicate immunisations and possible adverse events from drug-to-drug interactions. A national electronic immunisation data collection system could further improve the monitoring and evaluation of immunisation rates in Austria.
- **Digital imaging in ELGA:** expand the database for digital images from different medical devices to improve site- and time-independent information sharing between medical professionals and health care enterprises to enhance operational efficiency and to prevent unnecessary repeat examinations.
- **Standardisation of the diagnosis classification system:** inclusion of outpatient diagnoses may constitute a better representation of a patient's medical history and interoperability could be improved by standardising the diagnosis classification system.
- **Evaluation and monitoring of a patient's medical history:** a tracking system with a search function to monitor the development of specific parameters, such as blood pressure, may further enhance patient treatment. Further efforts should be undertaken to implement a patient summary.
- **Expansion of data collection:** a more extensive patient record, which, for example, includes information from the yearly medical check-up, could further improve patient-centred care, provided an insured person has expressed interest in the service.
- **Immediate sharing of information on health care use:** providing information on health care costs in addition to the utilisation of services through ELGA's online portal could enable year-round access to necessary information for patients and prevent billing errors.
- **Dissemination of information on ELGA to health care providers:** develop ELGA showcases that could be presented to health care providers, such as pharmacies, to facilitate and support the roll out of ELGA across as many health care providers as possible.

See section 6.6.2 for further details.

9.12 Policy options: Pharmaceutical expenditure and procurement

The following three policies are recommended in regard to pharmaceutical expenditure:

- **Enhance international relationships** to gain a better understanding of drug transaction prices within the outpatient market. Currently, external reference pricing, which draws upon list prices, is used, which doesn't necessarily reflect actual prices paid for drugs.
- Austria should consider **modifying domestic regulations on statutory prescription drug price cuts** so that they are linked to patent expiration rather than generic drug entry.
- **Limit the risk faced by payers and promote efficient use of resources** by introducing managed entry agreements.

To enhance the use of generics, the following policies are suggested:

- Given the increasing demand for healthcare services, we recommend **increasing the role of pharmacists** within the healthcare system, which would enhance efficiency and reduce the burden placed on physicians.
- **Incentivise physicians to prescribe more generics**, where appropriate.

Finally, to enhance procurement policies:

- Effort should be directed at **improving interface management between inpatient and outpatient pharmaceutical sectors** to limit cost-shifting and improve coordination of patient treatment. For example, by developing a joint budget for all pharmaceuticals, enhancing the role of the Medikamentenkommission, and /or enhancing ELGA so that information regarding a patient's drug treatment (in both inpatient and outpatient settings) is easily understood by prescribers.

See section 6.7.5 for further details.

9.13 Policy options: Health literacy, disease prevention, health promotion

The following policy options relating to health literacy and disease prevention are provided below:

Health literacy

- **Improving health communication between patients and doctors:** Clear health communication between patients and doctors could be further improved by specifying specific criteria pertaining

to the communication process (e.g. 'teach back'; avoiding jargon) in the Chamber of Physician's quality evaluation criteria of physician practices or in contracts.

- **Expand the dissemination of health information:** the national self-information portal could offer a number of additional language settings, other than German, in order to increase use of the site. A child-friendly, interactive information site could be developed as well.
- **Increase role of different stakeholders:** the role of various stakeholders in promoting health literacy should be increased. For instance, a point of contact for patients with limited health literacy levels should be defined to offer training and support, such as patient ombudsperson offices, while physicians could direct the respective patients to these contact points. Pharmacists could be further trained to identify and manage patients with lower literacy levels.
- **Module on health literacy:** a module on health literacy in the education setting (e.g. primary or secondary education) could be introduced to establish a solid and uniform health literacy knowledge basis across population groups.

Disease prevention

Immunisation

- **Inclusion of vaccinations in the mother-child passport:** create awareness and incentivize immunisation of children to increase low childhood immunisation rates.
- **Coverage of cost-effective vaccines for adults:** an additional coverage of adult vaccinations, where cost-effective, could potentially increase adult immunisation rates of a number of important vaccine-preventable diseases.
- **Walk-in vaccination and injection services at pharmacies:** by introducing walk in vaccination and injection services at community pharmacies, following a prescription by a physician, the immunisation process could be rendered more flexible, time-saving and convenient to patients.
- **E-vaccination to improve monitoring and re-calling of-, as well as data collection on vaccinations:** implement an e-vaccination application with a recall system in order to create an optimised overview of immunisation status and vaccination schedule, whilst preventing duplicate immunisations and possible adverse events from drug-to-drug interactions. A national electronic immunisation data collection system could further improve the monitoring and evaluation of immunisation rates in Austria.

Diabetes

- **Expansion of the diabetes disease-management-programme (DMP):** in order to improve the equity and quality of diabetes treatment in Austria, it is suggested to further strengthen efforts in the disease management programme, which should be gradually expanded over time.
- **Remuneration of DMP-physicians:** the financial compensation of DMP-physicians should be assessed in order to ensure appropriate rewards in line with the time taken to manage diabetes patients, and to incentivise more physicians to enter the programme.
- **Training of physicians:** inclusion of diabetes specific-tasks in the grid certificate may further expose physicians to additional training and as such improve the management of patients with diabetes. Another option is to render further training more binding by defining explicit follow-up measures in the case that physicians fail to follow the training.
- **Training of DMP-physicians:** the introduction of a voluntary training and a confidential supervision by experienced diabetes specialists may increase physician participation in the DMP programme.
- **Establishment of a national diabetes registry:** By extending data collection efforts, a national diabetes registry could be implemented in order to improve the collection of data to monitor and evaluate trends in diabetes.

Cardiovascular diseases

- **Comprehensive study:** Undertake a comprehensive study into the underlying factors of the high CVD disease burden and mortality in Austria. Based on the findings, appropriate measures could be introduced to reduce CVD-related morbidity and mortality.

See sections 7.1.3, 7.1.5 and 7.1.9 for further details.

9.14 Policy options: Case and care management

A total of eight policy options to enhance case and care management within Austria have been proposed:

- Target case management and other types of coordinated care based on need
- Pilot new models, evaluate pilots rigorously and scale up successful ones
- Increase organisational and financial integration of providers
- Ensure comprehensiveness of the range of services covered by case management
- Include inter-disciplinary cooperation in education and training programs of professionals

- Continue strengthening the role of primary care and embed case management in primary care
- Provide workplace and return-to-work interventions early
- Embed case management in broad return-to-work interventions.

See section 7.2.7 for further details.

9.15 Policy options: Administration costs

The following policy option relating to administration costs is provided below:

- **Administration caps:** link caps to potential economies of scale arising from more streamlined activities, as opposed to historical allocations. Alternatively, require health insurance carriers to justify higher administration costs, given such costs are often required to improve equality (e.g. performance measurement).

See section 8.2.3 for further details.

9.16 Policy options: Healthcare fraud

Healthcare fraud leads to a significant amount of waste in healthcare systems across the world, including Austria. To combat healthcare fraud and limit waste within the system, the following two policy options are recommended:

- **Comprehensive study:** Jointly undertake a comprehensive study into the types of healthcare fraud within the system, including an estimate of their associated costs based on findings within the study, implement appropriate policies to create an environment that limits the opportunity for fraud to occur
- **Digitalisation:** enhance the sophistication of ELGA to enable health insurance carriers to better identify instance of healthcare fraud

See section 8.3.8 for further details.

References

1. WHO | Universal coverage - three dimensions [Internet]. WHO. [cited 2017 Jul 14]. Available from: http://www.who.int/health_financing/strategy/dimensions/en/
2. Doetinchem O, Carrin G, Evans D. Thinking of introducing social health insurance? Ten questions. Backgr Pap [Internet]. 2010;26. Available from: http://www.who.int/entity/healthsystems/topics/financing/healthreport/26_10Q.pdf?ua=1
3. Fierlbeck K, Palley HA. Comparative Health Care Federalism [Internet]. Ashgate Publishing, Ltd.; 2015. Available from: https://books.google.co.uk/books?hl=en&lr=&id=ZTqvCQAAQBAJ&oi=fnd&pg=PR9&dq=comparative+health+care+federalism&ots=YxrPznKFDC&sig=4KvKVdVY_PsNnciFLHJD6SNiQhs
4. Hofmarcher M, Quentin W. Health system review. Health Syst Transit. 2013;15(7):1– 291.
5. Hofmarcher M. Health system performance in Austria has improved but it needs more effort [Internet]. Health System Intelligence; 2015 Apr. Available from: http://www.healthsystemintelligence.eu/docs/FastTrack_MMH-CSRHealth_2015.pdf
6. Czypionka T, Kraus M, Röhrling G, Lappöhn S, Six E. Gesundheitsfinanzierung: Status Quo und Potentiale zur Veränderung. Vienna: IHS-Projektbericht; 2015.
7. HVSV. Handbuch der österreichischen Sozialversicherung 2017.
8. Hauptverband der Österreichischen Sozialversicherungsträger. Die österreichische Sozialversicherung in Zahlen. 2017 Mar.
9. Thomson S, Figueras J, Evetovits T, Jowett M, Mladovsky P, Maresso A, et al. Economic crisis, health systems and health in Europe: impact and implications for policy [Internet]. WHO Regional Office for Europe; 2014. Available from: https://www.researchgate.net/profile/Sarah_Thomson/publication/266852194_Economic_Crisis_Health_Systems_and_Health_in_Europe_Impact_and_Implications_for_Policy/links/56bce95408ae5e7ba40f999d.pdf
10. Eurobarometer (2014): Patient Safety and Quality of Care. National fact sheet - Austria.
11. OECD. Health at a Glance: Europe 2016 [Internet]. Available from: <http://www.oecd.org/health/health-at-a-glance-europe-23056088.htm>
12. Rechnungshof. Tätigkeitsbericht des Rechnungshofs. Verwaltungsjahr 2001. 2002.
13. Rechnungshof. Bericht des Rechnungshofes - Mittelflüsse im Gesundheitswesen [Internet]. 2017. Available from: http://www.rechnungshof.gv.at/fileadmin/downloads/_jahre/2017/berichte/teilberichte/bund/Bund_2017_10/Bund_2017_10_1.pdf

14. Czypionka T, Riedel M, Röhrling G, Eichwalder S. Finanzierung aus einer Hand: Reformoptionen für Österreich [Internet]. 2009 p. 16–326. Available from: <https://www.ihs.ac.at/publications/lib/IHSPR524945.pdf>
15. Czypionka T. Reforming healthcare in a country with numerous players: The case of Austria. European Conference on Health Economics; 2012 Jul 19; Zurich.
16. Czypionka T, Riedel M, Röhrling G, Lappöhn S, Six E. Zukunft der Sozialen Krankenversicherung. Entwicklungsmöglichkeiten für Österreich. IHS Endbericht; 2017.
17. OECD. Health at a Glance 2015: OECD Indicators [Internet]. Paris: OECD Publishing; 2015. Available from: http://dx.doi.org/10.1787/health_glance-2015-en
18. Rechnungshof. Teilbereiche der Gesundheitsreform 2005 mit Länderaspekten in Tirol und Wien. Reihe Bund 2010/5; 2010.
19. Rechnungshof. Bericht des Rechnungshofes Bund 2015/17 - Rolle des Bundes in der österreichischen Krankenanstaltenplanung [Internet]. 2015 p. 13–98. Available from: http://www.rechnungshof.gv.at/fileadmin/downloads/_jahre/2015/berichte/teilberichte/bund/Bund_2015_17/Bund_2015_17_1.pdf
20. Trukeschitz B, Schneider U, Czypionka T. Federalism in health and social care in Austria. Fed Decentralization Eur Health Soc Care Basingstoke. 2013;154–189.
21. Grossmann B, Hauth E. Verwaltungs- und Pensionsreformen im öffentlichen Dienst sowie Finanzierung des Krankenanstaltenwesens. Vienna: Staatsschuldenausschuss, Manz; 2007.
22. Czypionka T, Kraus M, Riedel M, Sigl C. Aufgabenorientierung im österreichischen Gesundheitswesen. IHS Endbericht;
23. Saltman R, Rico A, Boerma W. Social health insurance systems in western Europe [Internet]. McGraw-Hill Education (UK); 2004. Available from: <https://books.google.at/books?hl=en&lr=&id=dQpewBbXn8oC&oi=fnd&pg=PP1&dq=Social+health+insurance+systems+in+western+Europe&ots=9kq24krWrU&sig=3VquAeYajJrb66djS3CFKLX498E>
24. Schang L, Thomson S, Czypionka T. Explaining differences in stakeholder take up of disease management programmes: A comparative analysis of policy implementation in Austria and Germany. Health Policy. 2016;120(3):281–292.
25. Rechnungshof. Verwaltungsreform 2011, Reihe 2011/1 [Internet]. Available from: http://www.rechnungshof.gv.at/fileadmin/downloads/_jahre/2011/beratung/positionen/Verwaltungsreform_2011.pdf
26. Leiter A, Theurl E. Soziale Krankenversicherung und Einkommensteuer: Empirische Tarifanalyse einer komplexen Beziehung (Social Health Insurance and Income Tax: Empirical Tariff Analysis of a Complex Relationship). Wirtsch Ges. 2004;30.

27. Leiter A, Theurl E. Verteilungswirkungen von Gesundheitsfinanzierungssystemen: Eine Analyse der Sozialen Krankenversicherung in Deutschland, Schweiz, Österreich, in, J. Nussbaumer, G. Pruckner, E. Theurl (ed): Streiflichter der Verteilungsgerechtigkeit Metropolis, Marburg. 2008.
28. OECD. Taxing Wages 2017 [Internet]. Paris: OECD Publishing; Available from: http://dx.doi.org/10.1787/tax_wages-2017-en
29. Hauptverband der österreichischen Sozialversicherungsträger. Unterschiedliche Satzungsregelungen der Krankenversicherungsträger nach dem ASVG, GSVG, BSVG und B-KUVG - Stand: 1.1.2016. 2016.
30. Ladurner J, Gerger M, Holland W, Mossialos E, Merkur S, Stewart S, et al. Public Health in Austria: An analysis of the status of public health [Internet]. Vol. 24. World Health Organization; 2011 [cited 2016 Nov 30]. Available from: <http://eprints.lse.ac.uk/43950/>
31. Joosseens L, Raw M. The tobacco control scale 2016 [Internet]. 2016. Available from: <http://www.tobaccocontrolscale.org/results-last-edition/>
32. GÖG. Rahmen-Gesundheitsziele Gesamtkonzept für ein begleitendes Monitoring. Gesundheit Österreich GmbH; 2014.
33. GÖG. Zielsteuerung Gesundheit – Monitoringbericht 2016/II. Gesundheit Österreich GmbH; 2017.
34. Smith PC, Busse R. Peer Reviewed: Learning From the European Experience of Using Targets to Improve Population Health. *Prev Chronic Dis* [Internet]. 2010;7(5). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2938396/>
35. Wismar M, McKee M, Ernst K, Srivastava D, Busse R. Health targets in Europe. *Learn Exp Eur Union World Health Organ* [Internet]. 2008; Available from: http://www.euro.who.int/__data/assets/pdf_file/0008/98396/E91867.pdf
36. Cypionka T, Röhrling G, Mayer S. The relationship between outpatient department utilisation and non-hospital ambulatory care in Austria. *Eur J Public Health*. 2017;27(1):20–25.
37. Kringos DS, Boerma WG, Hutchinson A, Saltman RB. Building primary care in a changing Europe [Internet]. World Health Organization, European Observatory on Health Systems and Policies; 2015 [cited 2017 Jun 1]. Available from: <http://www.healthrights.mk/healthrightsmk/pdf/Publikacii/Opsti/2015/1/BuildingPrimaryCareChangingEurope.pdf>
38. Burkert NT. Ambulatory Care Sensitive Conditions – Potentiell vermeidbare stationäre Aufenthalte, entsprechende Diagnosen, Einflussfaktoren und Empfehlungen zur Durchführung von Untersuchungen. Research Report. Medical University of Graz; 2014.
39. Cypionka T, Röhrling G, Ulinski S. Ambulatory Care Sensitive Conditions (ACSC): Einflussfaktoren international und in Österreich. IHS Endbericht; 2014.
40. Cypionka T, Riedel M, Obradovits S, Allemanni C. Vergütung im ambulanten Bereich unter besonderer Berücksichtigung intermediärer Versorgungsformen. IHS Endbericht; 2011.

41. Czypionka T, Röhrling G, Pointner T. Reinvestment in health. IHS-Projektbericht; 2013.
42. Reidel M. Festlegung von Kassentarifen. IHS Endbericht. (forthcoming). 2017.
43. Sommersguter-Reichmann M, Stepan A. Hospital physician payment mechanisms in Austria: do they provide gateways to institutional corruption? *Health Econ Rev.* 2017;7(1):11.
44. Czypionka T, Kraus M, Röhrling G. Wartezeiten auf Elektivoperationen-Neues zur Frage der Transparenz? 2013; Available from: <http://irihs.ihs.ac.at/3141/>
45. Sommersguter-Reichmann M, Stepan A. The interplay between regulation and efficiency: Evidence from the Austrian hospital inpatient sector. *Socioecon Plann Sci.* 2015;52:10–21.
46. Czypionka T, Kraus M, Mayer S, Röhrling G. Efficiency, ownership, and financing of hospitals: The case of Austria. *Health Care Manag Sci.* 2014;17(4):331–347.
47. Czypionka T, Kraus M, Sigl C, Warmuth J. Health Cooperation. Kostendämpfung durch Kooperation im Gesundheitswesen. Vienna: IHS-Projektbericht; 2012.
48. Riedel M, Czypionka T. Health Professionals der Zukunft. 2012; Available from: <http://irihs.ihs.ac.at/3146/>
49. Monitoringbericht 2017. Forthcoming;
50. Sperl W, Nemeth C, Fülöp G, Koller I, Vavrik K, Bernert G, et al. Rehabilitation für Kinder und Jugendliche in Österreich. *Monatsschr Kinderheilkd.* 2011;159(7):618–626.
51. Vogler S, Zimmermann N, Habl C. Preisanalyse von 30 kostenintensiven Arzneispezialitäten in Österreich im Vergleich mit anderen europäischen Ländern. Bericht der Gesundheit Österreich GmbH.; 2015.
52. Health expenditure and financing [Internet]. [cited 2017 Apr 20]. Available from: <http://stats.oecd.org/index.aspx?DataSetCode=SHA>
53. Eurostat. Hospital beds [Internet]. 2017. Available from: <http://ec.europa.eu/eurostat/web/products-datasets/-/tps00046>
54. Kontis V, Bennett JE, Mathers CD, Li G, Foreman K, Ezzati M. Future life expectancy in 35 industrialised countries: projections with a Bayesian model ensemble. *The Lancet.* 2017 Apr 1;389(10076):1323–35.
55. Global burden of disease study. *The Lancet*; 2015.
56. Allemani C, Weir HK, Carreira H, Harewood R, Spika D, Wang X-S, et al. Global surveillance of cancer survival 1995–2009: analysis of individual data for 25 676 887 patients from 279 population-based registries in 67 countries (CONCORD-2). *The Lancet.* 2015 Mar 20;385(9972):977–1010.
57. World Bank. Diabetes prevalence (% of population ages 20 to 79) [Internet]. 2015. Available from: <http://data.worldbank.org/indicator/SH.STA.DIAB.ZS>

58. Weissman JS, Gatsonis C, Epstein AM. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. *Jama*. 1992;268(17):2388–2394.
59. Purdy S, Griffin T, Salisbury C, Sharp D. Ambulatory care sensitive conditions: terminology and disease coding need to be more specific to aid policy makers and clinicians. *Public Health*. 2009;123(2):169–173.
60. Bourret R, Mercier G, Mercier J, Jonquet O, De La Coussaye J-E, Bousquet PJ, et al. Comparison of two methods to report potentially avoidable hospitalizations in France in 2012: a cross-sectional study. *BMC Health Serv Res*. 2015;15(1):4.
61. Caminal J, Starfield B, Sánchez E, Casanova C, Morales M. The role of primary care in preventing ambulatory care sensitive conditions. *Eur J Public Health*. 2004;14(3):246–251.
62. Levy D, Larson MG, Vasan RS, Kannel WB, Ho KK. The progression from hypertension to congestive heart failure. *Jama*. 1996;275(20):1557–1562.
63. Eurostat. EUROPEAN HEALTH INTERVIEW SURVEY (EHIS). 2008.
64. Detollenaere J, Hanssens L, Vyncke V, De Maeseneer J, Willems S. Do We Reap What We Sow? Exploring the Association between the Strength of European Primary Healthcare Systems and Inequity in Unmet Need. *PloS One*. 2017;12(1):e0169274.
65. European Commission. Access to health services in the European Union: Expert Panel on Effective Ways of Investing in Health [Internet]. 2016. Available from: https://ec.europa.eu/health/expert_panel/sites/expertpanel/files/015_access_healthservices_en.pdf
66. Hofmarcher M, Quentin W. Austria: Health system review. *Health Syst Transit*. 2013;15(7):1–291.
67. Hauptverband der österreichischen Sozialversicherungsträger. Statistisches Handbuch der österreichischen Sozialversicherung 2016 [Internet]. 2016. Available from: <https://www.sozialversicherung.at/cdscontent/load?contentid=10008.555191&version=1474454013>
68. Hofmarcher MM, Quentin W. Austria: health system review. *Health Syst Transit*. 2012;15(7):1–292.
69. Silberston A. Economies of Scale in Theory and Practice. *Econ J*. 1972;82(325):369–91.
70. Economies of scale and scope. *The Economist* [Internet]. 2008 Oct 20; Available from: <http://www.economist.com/node/12446567>
71. Berger AN, Cummins JD, Weiss MA, Zi H. Conglomeration Versus Strategic Focus: Evidence from the Insurance Industry [Internet]. Wharton School Center for Financial Institutions, University of Pennsylvania; 2000 Mar [cited 2017 Jul 11]. (Center for Financial Institutions Working Papers). Report No.: 99–29. Available from: <https://ideas.repec.org/p/wop/pennin/99-29.html>

72. Rechnungshof. Bericht des Rechnungshofes [Internet]. 2014 p. 115–74. Available from: http://www.rechnungshof.gv.at/fileadmin/downloads/_jahre/2014/berichte/teilberichte/bund/Bund_2014_08/Bund_2014_08_2.pdf
73. Rice N, Smith PC. Strategic resource allocation and funding decisions. *Funding Health Care Options Eur.* 2002;250.
74. About CCGs [Internet]. NHS Clinical Commissioners. [cited 2017 May 10]. Available from: <https://www.nhscc.org/ccgs/>
75. Juhnke C, Bethge S, Mühlbacher A. A Review on Methods of Risk Adjustment and their Use in Integrated Healthcare Systems. *Int J Integr Care* [Internet]. 2016 Oct 26 [cited 2017 Apr 9];16(4). Available from: <http://www.ijic.org/articles/10.5334/ijic.2500/>
76. Smith P, Witter S. Risk pooling in health care finance. In: Report Prepared for the Worldbank Workshop “Resource Allocation and Purchasing in Health: Value for Money, Reaching the Poor” York/Washington DC Available online: <http://www.york.ac.uk/inst/che/pooling.pdf> [Internet]. 2001 [cited 2017 May 11]. Available from: <https://pdfs.semanticscholar.org/ea94/4f3c9a5475ed8c30a0abf131a2058ad11bde.pdf>
77. Wenzl M, McCuskee S, Mossialos E. Commissioning for equity in the NHS: rhetoric and practice. *Br Med Bull.* 2015;115(1):5–17.
78. How the NHS in England is now structured [Internet]. The King’s Fund. [cited 2017 May 11]. Available from: <https://www.kingsfund.org.uk/projects/nhs-in-a-nutshell/how-nhs-england-now-structured>
79. Naylor. Clinical commissioning groups: Supporting improvement in general practice? [Internet]. 2013. Available from: https://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/clinical-commissioning-groups-report-ings-fund-nuffield-jul13.pdf
80. NHS England. Technical Guide to Allocation Formulae and Pace of Change: For 2016-17 to 2020-21 revenue allocations to Clinical Commissioning Groups and commissioning areas [Internet]. 2016. Available from: <https://www.england.nhs.uk/wp-content/uploads/2016/04/1-allctins-16-17-tech-guid-formulae.pdf>
81. Schokkaert E, Van de Voorde C. Direct versus indirect standardization in risk adjustment. *J Health Econ.* 2009;28(2):361–374.
82. Gerkens S, Merkur S. Belgium: Health system review. *Health Syst Transit.* 2010;12(5):1–266.
83. Rice N, Smith P, others. Approaches to capitation and risk adjustment in health care: an international survey [Internet]. University of York, Centre for Health Economics York; 1999 [cited 2017 Apr 19]. Available from: <http://www.york.ac.uk/che/pdf/op38.pdf>
84. Schokkaert E, Van de Voorde C. Belgium: risk adjustment and financial responsibility in a centralised system. *Health Policy.* 2003;65(1):5–19.

85. Schokkaert E, Van de Voorde C. Belgium's health care system: Should the communities/regions take it over? Or the sickness funds? *Belg Healthc Syst.* 2011;6.
86. Buchner F, Wasem J. Needs for further improvement: risk adjustment in the German health insurance system. *Health Policy.* 2003;65(1):21–35.
87. Buchner F, Goepffarth D, Wasem J. The new risk adjustment formula in Germany: Implementation and first experiences. *Health Policy.* 2013 Mar;109(3):253–62.
88. Pilny A, Wübker A, Ziebarth NR. Introducing risk adjustment and free health plan choice in employer-based health insurance: Evidence from Germany [Internet]. *Ruhr Economic Papers*; 2017 [cited 2017 May 5]. Available from: <https://www.econstor.eu/handle/10419/156757>
89. Busse R, Blumel M. Health Systems in Transition: Germany - Health System Review. World Health Organization; 2014.
90. GTAI - The German Social Security System [Internet]. [cited 2017 Apr 19]. Available from: <https://www.gtai.de/GTAI/Navigation/EN/Invest/Investment-guide/Employees-and-social-security/the-german-social-security-system,t=allocation-of-contributions,did=6730.html>
91. Gaskins M, Busse R. Morbidity-based risk adjustment in Germany. *Eurohealth.* 2009;15(3):29.
92. Göpffarth D, Henke K-D. The German Central Health Fund-recent developments in health care financing in Germany. *Health Policy Amst Neth.* 2013 Mar;109(3):246–52.
93. van de Ven WP, van Kleef RC, van Vliet RC. Risk selection threatens quality of care for certain patients: lessons from Europe's health insurance exchanges. *Health Aff (Millwood).* 2015;34(10):1713–1720.
94. Ministry of Health, Welfare and Sport. Risk adjustment under the Health Insurance Act in the Netherlands [Internet]. 2008 Jun. Available from: http://www.ipp.hit-u.ac.jp/tajika/lecture/material/Dutch_Helth_Insurance.pdf
95. Exter A den, Hermans H, Dosljak M, Busse R, Ginneken E van, Schreyoegg J, et al. Health care systems in transition: Netherlands. 2004 [cited 2017 Apr 19]; Available from: <http://apps.who.int/iris/handle/10665/107605>
96. Ministerie van Volksgezondheid W en S. Home - Zorginstituut Nederland [Internet]. 2013 [cited 2017 Apr 19]. Available from: <https://www.zorginstituutnederland.nl/>
97. Monica 1776 Main Street Santa, 90401-3208 C. 12-Item Short Form Survey (SF-12) | RAND [Internet]. [cited 2017 May 5]. Available from: https://www.rand.org/health/surveys_tools/mos/12-item-short-form.html
98. von Wyl V, Beck K. Do insurers respond to risk adjustment? A long-term, nationwide analysis from Switzerland. *Eur J Health Econ.* 2016;17(2):171–183.
99. De Pietro C, Camenzind P, Sturny I, Crivelli L, Edwards-Garavoglia S, Spranger A, et al. Switzerland: Health System Review. *Health Syst Transit.* 2015;17(4):1–288.

100. Statistik Austria. Health Expenditure in Austria [Internet]. 2017. Available from: http://www.statistik.at/web_en/statistics/PeopleSociety/health/health_expenditure/index.html
101. Bundesgesundheitsagentur [Internet]. Gesundheitsportal. [cited 2017 May 25]. Available from: <https://www.gesundheit.gv.at/lexikon/b/bundesgesundheitsagentur1>
102. Sozialversicherungsanstalt der gewerblichen Wirtschaft. Vorläufige Berechnung der Beiträge [Internet]. 2017. Available from: <http://esv-sva.sozvers.at/portal27/svportal/content?contentid=10007.740775&portal:componentId=gtn19f51671-c4c5-458e-901f-6c64ad50cc07&viewmode=content>
103. Haydn R. Personenbezogene Statistiken 2015. Fachzeitschrift für soziale Sicherheit. 2016;65–74.
104. Hauptverband der österreichischen Sozialversicherungsträger. Beitragsrechtliche Werte in der Sozialversicherung 2017 [Internet]. 2017. Available from: <http://www.bva.at/cdscontent/load?contentid=10008.636880&version=1483427440>
105. Österreichische Sozialversicherung. Monatliche Beitragsgrundlagenmeldung [Internet]. 2017. Available from: <https://www.sozialversicherung.at/portal27/esvportal/content?contentid=10007.769375&viewmode=content&portal:componentId=gtn726db182-96ed-4095-9bb2-c4cf36685fa7>
106. Österreichische Sozialversicherung. Monatliche Beitragsgrundlagenmeldung (bMGM) - Fragen-Antworten-Katalog [Internet]. 2016. Available from: <https://www.sozialversicherung.at/cdscontent/load?contentid=10008.634887&version=1478178373>
107. Glassman A, Giedion U, Sakuma Y, Smith PC. Defining a Health Benefits Package: What Are the Necessary Processes? Health Syst Reform. 2016 Jan 21;2(1):39–50.
108. Van der Wees P, Wammes J, Westert G, Jeurissen P. Omvang en financiering van het basispakket: een verkennende internationale vergelijking [Composition and financing of the basic package: an explorative international comparison]. Nijmegen: Academie voor Betaalbare Zorg; 2014. (Celcus).
109. Gerkens S, Merkur S. Belgium: Health system review. Health Syst Transit. 2010;12(5):1–266.
110. The Belgian Health Care Knowledge Centre (KCE). About the KCE [Internet]. Available from: <https://kce.fgov.be/about-kce>
111. Chevreul K, Berg Brigham K, Durand-Zaleski I, Hernández-Quevedo C. France: Health system review. Health Syst Transit. 2015;17(3):1–218.
112. Haute Autorité de Santé (HAS). Assessment of health technologies and procedures [Internet]. Available from: http://www.has-sante.fr/portail/jcms/c_2567683/en/portail-english-assessment-recommendation?portal=c_2567683
113. PKV. Zahlenbericht der Privaten Krankenversicherung 2015. Cologne: PKV; 2016.

114. NRW Verbraucherzentrale. Wahltarife und Satzungsleistungen der Krankenkassen - Eine Orientierungshilfe im Tarif- und Satzungsleistungsdschungel [Internet]. NRW Verbraucherzentrale; Available from: <https://www.verbraucherzentrale.nrw/media219631A.pdf>
115. Gemeinsamer Bundesausschuss. Aufgabe des G-BA [Internet]. G-BA. 2017. Available from: <https://www.g-ba.de/institution/themenschwerpunkte/methodenbewertung/aufgabe/>
116. Busse R, Blümel M. Germany: health system review. *Health Syst Transit*. 2014;16(2):1–296.
117. BMG. Wahltarife [Internet]. Bundesministerium für Gesundheit. Available from: https://bmg.bund.de/glossar_begriffe/v-y/wahltarife.html
118. BMG. Wahltarife, Bonusprogramme und Zusatzleistungen [Internet]. Bundesministerium für Gesundheit. Available from: <https://www.bundesgesundheitsministerium.de/themen/krankenversicherung/online-ratgeber-krankenversicherung/krankenversicherung/wahltarife-etc.html>
119. Government of Netherlands. Health Insurance in the Netherlands [Internet]. The Hague, Netherlands: Government of Netherlands; 2011. Available from: www.rijksoverheid.nl/zorgverzekering
120. Kroneman M, Boerma W, van den Berg M, Groenewegen P, de Jong J, van Ginneken E. The Netherlands: health system review. *Health Syst Transit*. 2016;18(2):1–239.
121. Kroneman M, de Jong J. The basic benefit package: Composition and exceptions to the rules. A case stud. *Health Policy*. 2015;119(3):245–51.
122. Government of Netherlands. Standard health insurance [Internet]. Government of Netherlands. Available from: <https://www.government.nl/topics/health-insurance/contents/standard-health-insurance>
123. Santerre RE, Neun SP. *Health Economics: Theory, Insights, and Industry Studies*. 6th ed. South-Western: Cengage Learning; 2013. 551 p.
124. Bundesamt für Gesundheit BAG. Die obligatorische Krankenversicherung kurz erklärt. BAG; 2017 Jan.
125. De Pietro C, Camenzind P, Sturny I, Crivelli L, Edwards-Garavoglia S, Spranger A, et al. Switzerland: Health system review. *Health Syst Transit*. 17(4):1–288.
126. Hofmarcher M, Quentin W. Austria: Health system review. *Health Syst Transit*. 2013;15(7):1–291.
127. van der Wees PJ, Wammes JJG, Westert GP, Jeurissen PPT. The Relationship Between the Scope of Essential Health Benefits and Statutory Financing: An International Comparison Across Eight European Countries. *Int J Health Policy Manag*. 2016;5(1):13–22.
128. McGhan WF, Al M, Doshi JA, Kamae I, Marx SE, Rindress D. The ISPOR good practices for quality improvement of cost-effectiveness research task force report. *Value Health*. 2009;12(8):1086–1099.

129. ISPOR. Pharmacoeconomic Guidelines Around The World Pharmacoeconomic guidelines around the world. [Internet]. 2014 Jun. Available from: <http://www.ispor.org/peguidelines/index.asp>
130. Mauskopf J, Walter J, Birt J, Bowman L, Copley-Merriman C, Drummond M. Differences among formulary submission guidelines: implications for health technology assessment. *Int J Technol Assess Health Care*. 2011;27(3):261–270.
131. Zentner A, Velasco-Garrido M, Busse R. Methods for the comparative evaluation of pharmaceuticals. *GMS Health Technol Assess* [Internet]. 2005;1. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3011319/>
132. Trowman R, Chung H, Longson C, Littlejohns P, Clark P. The National Institute for Health and Clinical Excellence and its role in assessing the value of new cancer treatments in England and Wales. *Clin Cancer Res*. 2011;17(15):4930–4935.
133. HAS. Choices in Methods for Economic Evaluation [Internet]. 2012. Available from: http://www.has-sante.fr/portail/upload/docs/application/pdf/2012-10/choices_in_methods_for_economic_evaluation.pdf.
134. CVZ. Guidelines for pharmacoeconomic research, updated version [Internet]. 2006. Available from: <https://www.zorginstituutnederland.nl/binaries/content/documents/zinl-www/documenten/publicaties/publications-in-english/2006/0604-guidelines-for-pharmacoeconomic-research/0604-guidelines-for-pharmacoeconomic-research/Guidelines+for+pharmacoeconomic+research.pdf>.
135. Schubert F. Health technology assessment: the pharmaceutical industry perspective. *Int J Technol Assess Health Care*. 2002;18(2):184–191.
136. vd Schulenburg J-MG, Vauth C, Mittendorf T, Greiner W. Methods for determining cost-benefit ratios for pharmaceuticals in Germany. *Eur J Health Econ*. 2007;8(1):5–31.
137. Franken M, le Polain M, Cleemput I, Koopmanschap M. Similarities and differences between five European drug reimbursement systems. *Int J Technol Assess Health Care*. 2012;28(4):349–357.
138. Morgan SG, McMahon M, Mitton C, Roughead E, Kirk R, Kanavos P, et al. Centralized drug review processes in Australia, Canada, New Zealand, and the United kingdom. *Health Aff (Millwood)*. 2006;25(2):337–347.
139. Manchikanti L, Falco FJ, Boswell MV, Hirsch JA. Facts, fallacies, and politics of comparative effectiveness research: Part 2-implications for interventional pain management. *Pain Physician*. 2010;13(1):E55–79.
140. Franken M, Nilsson F, Sandmann F, de Boer A, Koopmanschap M. Unravelling drug reimbursement outcomes: a comparative study of the role of pharmacoeconomic evidence in Dutch and Swedish reimbursement decision making. *Pharmacoeconomics*. 2013;31(9):781–797.
141. NICE. Social Value Judgements: Principles for the development of NICE guidance. 2008 [Internet]. 2008. Available from: <https://www.nice.org.uk/media/default/about/what-we-do/research-and-development/social-value-judgements-principles-for-the-development-of-nice-guidance.pdf>

142. Buxton M. Implications of the Appraisal Function of the National Institute for Clinical Excellence (NICE): Presented at the ISPOR Fifth Annual European Meeting, Antwerp, Belgium, November 5 to 8, 2000. *Value Health*. 2001;4(3):212–216.
143. Jena AB, Philipson TJ. Endogenous cost-effectiveness analysis and health care technology adoption. *J Health Econ*. 2013;32(1):172–180.
144. Rawlins MD, Culyer AJ. National Institute for Clinical Excellence and its value judgments. *BMJ*. 2004;329(7459):224.
145. Golan O, Hansen P, Kaplan G, Tal O. Health technology prioritization: which criteria for prioritizing new technologies and what are their relative weights? *Health Policy*. 2011;102(2):126–135.
146. Hughes-Wilson W, Palma A, Schuurman A, Simoens S. Paying for the Orphan Drug System: break or bend? Is it time for a new evaluation system for payers in Europe to take account of new rare disease treatments? *Orphanet J Rare Dis*. 2012;7(1):74.
147. Kaltenthaler E, Boland A, Carroll C, Dickson R, Fitzgerald P, Papaioannou D. Evidence Review Group approaches to the critical appraisal of manufacturer submissions for the NICE STA process: a mapping study and thematic analysis. 2011; Available from: <https://www.ncbi.nlm.nih.gov/books/NBK62553/>
148. Kleijnen S, George E, Goulden S, d’Andon A, Vitré P, Osińska B, et al. Relative effectiveness assessment of pharmaceuticals: similarities and differences in 29 jurisdictions. *Value Health*. 2012;15(6):954–960.
149. Towse A, Pritchard C. National Institute for Clinical Excellence (NICE): is economic appraisal working? *Pharmacoeconomics*. 2002;20(3):95–105.
150. Clement FM, Harris A, Li JJ, Yong K, Lee KM, Manns BJ. Using effectiveness and cost-effectiveness to make drug coverage decisions: a comparison of Britain, Australia, and Canada. *Jama*. 2009;302(13):1437–1443.
151. NICE. Guide to the methods of technology appraisal 2013 [Internet]. 2013. Available from: <https://www.nice.org.uk/article/pmg9/resources/non-guidance-guide-to-the-methods-of-technology-appraisal-2013-pdf>
152. Milne R, Clegg A, Stevens A. HTA responses and the classic HTA report. *J Public Health*. 2003;25(2):102–106.
153. Mauskopf JA, Sullivan SD, Annemans L, Caro J, Mullins CD, Nuijten M, et al. Principles of good practice for budget impact analysis: report of the ISPOR Task Force on good research practices—budget impact analysis. *Value Health*. 2007;10(5):336–347.
154. Dakin HA, Devlin NJ, Odeyemi IA. “Yes”, “No” or “Yes, but”? Multinomial modelling of NICE decision-making. *Health Policy*. 2006;77(3):352–367.
155. Kirkdale R, Krell J, O’Hanlon Brown C, Tuthill M, Waxman J. The cost of a QALY. *QJM Int J Med*. 2010;103(9):715–720.

156. Sjögren E. Deciding subsidy for pharmaceuticals based on ambiguous evidence. *J Health Organ Manag.* 2008;22(4):368–383.
157. McMahon M, Morgan S, Mitton C. The common drug review: a NICE start for Canada? *Health Policy.* 2006;77(3):339–351.
158. Banta HD, de Wit GA. Public health services and cost-effectiveness analysis. *Annu Rev Public Health.* 2008;29:383–397.
159. Raftery J. Review of NICE’s recommendations, 1999-2005. *BMJ.* 2006;332(7552):1266.
160. Simoens S. Use of economic evaluation in decision making: evidence and recommendations for improvement. *Drugs.* 2010;70(15):1917–1926.
161. NICE. The guidelines manual. 2009.
162. Stewart A, Aubrey P, Belsey J. Addressing the health technology assessment of biosimilar pharmaceuticals [Internet]. Taylor & Francis; 2010. Available from: <http://www.tandfonline.com/doi/abs/10.1185/03007995.2010.505137>
163. Claxton K, Martin S, Soares M, Rice N, Spackman E, Hinde S, et al. Methods for the estimation of the National Institute for Health and Care Excellence cost-effectiveness threshold. *Health Technol Assess Winch Engl.* 2015;19(14):1.
164. Briggs AH, Levy AR. Pharmacoeconomics and Pharmacoepidemiology. *Pharmacoeconomics.* 2006;24(11):1079–1086.
165. Chalkidou K. Evidence and values: paying for end-of-life drugs in the British NHS. *Health Econ Policy Law.* 2012;7(4):393–409.
166. Toumi M, Remuzat C, El Hammi E, Millier A, Aballéa S, Chouaid C, et al. Current process and future path for health economic assessment of pharmaceuticals in France. *J Mark Access Health Policy.* 2015;3(1):27902.
167. Advanced HTA. Personal communication with experts. In: Advance-HTA Project. 2016.
168. HAS. La Commission évaluation économique et de santé publique (CEESP) [Internet]. 2012. Available from: http://www.has-sante.fr/portail/upload/docs/application/pdf/2012-11/quest-ce_que_la_ceesp-brochure2clics_2012-11-22_10-13-34_631.pdf
169. Le Pen C, Priol G, Lilliu H. What criteria for pharmaceuticals reimbursement? *Eur J Health Econ.* 2003;4(1):30–36.
170. Gridchyna I, Aulois-Griot M, Maurain C, Bégaud B. How innovative are pharmaceutical innovations? The case of medicines financed through add-on payments outside of the French DRG-based hospital payment system. *Health Policy.* 2012;104(1):69–75.

171. G-BA. Chapter 5: Benefit Assessment of pharmaceuticals according to s. 35a SGB V. 2015 [Internet]. Available from: <http://www.english.g-ba.de/downloads/17-98-3042/Chapter5-Rules-of-Procedure-G-BA.pdf>
172. IQWiG. General Methods [Internet]. 2011. Available from: https://www.iqwig.de/download/General_Methods_4-0.pdf
173. IQWiG. General Methods [Internet]. 2015. Available from: https://www.iqwig.de/download/IQWiG_General_Methods_Version_%204-2.pdf
174. IQWiG. General Methods for the Assessment of the Relation of Benefits to Costs. 2009. [Internet]. 2009. Available from: http://www.ispor.org/peguidelines/source/Germany_AssessmentoftheRelationofBenefitstoCosts_En.pdf
175. Rogowski WH, Hartz SC, John JH. Clearing up the hazy road from bench to bedside: a framework for integrating the fourth hurdle into translational medicine. *BMC Health Serv Res.* 2008;8(1):194.
176. Cleemput I, Franken M, Koopmanschap M, le Polain M. EUROPEAN DRUG REIMBURSEMENT SYSTEMS' LEGITIMACY: FIVE-COUNTRY COMPARISON AND POLICY TOOL. *Int J Technol Assess Health Care.* 2012;28(4):358–366.
177. Dirksen CD, Utens CM, Joore MA, Van Barneveld TA, Boer B, Dreesens DH, et al. Integrating evidence on patient preferences in healthcare policy decisions: protocol of the patient-VIP study. *Implement Sci.* 2013;8(1):64.
178. Banta D, Oortwijn W. The Netherlands. *Int J Technol Assess Health Care.* 2009 Suppl 1:143-147;
179. Boersma C, Broere A, Postma MJ. Quantification of the potential impact of cost-effectiveness thresholds on Dutch drug expenditures using retrospective analysis. *Value Health.* 2010;13(6):853–856.
180. Kenny N, Joffres C. An ethical analysis of international health priority-setting. *Health Care Anal.* 2008;16(2):145–160.
181. Capri S, Ceci A, Terranova L, Merlo F, Mantovani L, Pharmacoeconomic M of the IG for. Guidelines for economic evaluations in Italy: recommendations from the Italian group of pharmacoeconomic studies. *Drug Inf J.* 2001;35(1):189–201.
182. Gemmill MC, Thomson S, Mossialos E. What impact do prescription drug charges have on efficiency and equity? Evidence from high-income countries. *Int J Equity Health.* 2008 May 2;7:12.
183. Thomson S, Foubiser T, Mossialos E. Can user charges make health care more efficient? *MBJ.* 2010;341:487–9.
184. World Development Indicators | Data [Internet]. 2014. Available from: <http://data.worldbank.org/products/wdi>

185. Health Systems Characteristics Survey [Internet]. [cited 2017 Jan 19]. Available from: <http://qdd.oecd.org/data/HSC/.2016>.
186. Online HiT- HSPM [Internet]. Health Systems and Policy Monitor. [cited 2017 Mar 23]. Available from: <http://hspm.org/mainpage.aspx>
187. Online HiT for France- HSPM [Internet]. [cited 2017 Mar 20]. Available from: <http://www.hspm.org/countries/france25062012/countrypage.aspx>
188. Célant N, Dourgnon P, Guillaume S, Pierre A, Rochereau T, Sermet C. The 2012 Health, Health Care and Insurance Survey (ESPS): First Results [Internet]. 2014 May. Available from: <http://www.irdes.fr/english/issues-in-health-economics/198-the-2012-health-health-care-and-insurance-survey-esps.pdf>
189. Online HiT for Germany - HSPM [Internet]. [cited 2017 Feb 23]. Available from: <http://www.hspm.org/countries/germany28082014/livinghit.aspx?Section=3.4%20Out%20of%20pocket%20payments&Type=Section>
190. Winter DT von. Bundestag schafft einstimmig die Praxisgebühr ab [Internet]. Deutscher Bundestag. [cited 2017 Mar 23]. Available from: https://www.bundestag.de/dokumente/textarchiv/2012/41447099_kw45_de_praxisgebuehr/209922
191. Schreyögg J, Grabka M. Copayments for Ambulatory Care in Germany: A Natural Experiment Using a Difference-in-Difference Approach [Internet]. DIW Berlin, The German Socio-Economic Panel (SOEP); 2008 [cited 2017 Mar 20]. Report No.: 96. Available from: http://econpapers.repec.org/paper/diwdiwsop/diw_5fsp96.htm
192. Augurzky B, Bauer TK, Schaffner S. Copayments in the German Health System: Does it Work? 2006. (IZA Discussion Paper). Report No.: No 2290.
193. Rückert I-M, Böcken J, Mielck A. Are German patients burdened by the practice charge for physician visits ('Praxisgebuehr')? A cross sectional analysis of socio-economic and health related factors. BMC Health Serv Res. 2008 Dec 1;8(1):232.
194. Online HiT for Netherlands - HSPM [Internet]. [cited 2017 Feb 23]. Available from: <http://www.hspm.org/countries/netherlands25062012/livinghit.aspx?Section=3.4%20Out%20of%20pocket%20payments&Type=Section>
195. Sozialversicherungsanstalt der gewerblichen Wirtschaft. Gesund ist, selbständig gesund zu bleiben. [Internet]. Available from: <https://www.svagw.at/cdscontent/load?contentid=10008.586901&version=1455004670>
196. Jemai N, Thomson S, Mossialos E. An overview of cost sharing for health services in the European Union. Euro Obs. 2004;6(3):1–8.
197. IRDES. Income and the Demand for Complementary Health Insurance in France. 2009 April.

198. Thomson S, Foubister T, Mossialos E, others. Financing health care in the European Union: challenges and policy responses. [Internet]. World Health Organization; 2009 [cited 2017 May 8]. Available from: <https://www.cabdirect.org/cabdirect/abstract/20093282958>
199. Lohr K, Brook R, Kamberg C, Goldberg G, Leibowitz A, Keesey J, et al. Use of Medical Care in the Rand Health Insurance Experiment [Internet]. Santa Monica, CA: The RAND Corporation; 1986. (RAND Health Insurance Experiment Series). Available from: <https://www.rand.org/content/dam/rand/pubs/reports/2006/R3469.pdf>
200. Swartz K. Cost-sharing: effects on spending and outcomes. *Synth Proj Res Synth Rep*. 2010 Dec;(20).
201. Lostao L, Regidor E, Geyer S, Aiach P. Patient cost sharing and social inequalities in access to health care in three western European countries. *Soc Sci Med*. 2007 Jul;65(2):367–76.
202. Chernew M, Gibson TB, Yu-Isenberg K, Sokol MC, Rosen AB, Fendrick AM. Effects of Increased Patient Cost Sharing on Socioeconomic Disparities in Health Care. *J Gen Intern Med*. 2008 Aug;23(8):1131–6.
203. Schoen C, -, Gmeiner, Doty MM, Pierson R, Applebaum S. How health insurance design affects access to care and costs, by income, in eleven countries. *Health Aff Proj Hope*. 2010 Dec;29(12):2323–34.
204. Chandra A, Gruber J, McKnight R. Patient Cost-Sharing and Hospitalization Offsets in the Elderly. *Am Econ Rev*. 2010 Mar 1;100(1):193–213.
205. van Esch TEM, Brabers AEM, van Dijk CE, Gusdorf L, Groenewegen PP, de Jong JD. Increased cost sharing and changes in noncompliance with specialty referrals in The Netherlands. *Health Policy*. 2017 Feb;121(2):180–8.
206. Kiil A, Houlberg K. How does copayment for health care services affect demand, health and redistribution? A systematic review of the empirical evidence from 1990 to 2011. *Eur J Health Econ HEPAC Dordr*. 2014 Nov;15(8):813–28.
207. Manning WG, Newhouse JP, Duan N, Keeler EB, Leibowitz A. Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment. *Am Econ Rev*. 1987;77(3):251–77.
208. Goldman D, Joyce G, Zheng Y. Prescription Drug Cost Sharing: Associations with Medication and Medical Utilization and Spending and Health. *J Am Med Assoc [Internet]*. 2007;298(1). Available from: http://vbidcenter.org/wp-content/uploads/2014/11/Prescription-Drug-Cost-Sharing-Associations-With-Medication-and-Medical-Utilization-and-Spending-and-Health_JAMA_JUL_2007.pdf
209. Farrants K, Bambra C, Nylén L, Kasim A, Burström B, Hunter D. The recommodification of healthcare? A case study of user charges and inequalities in access to healthcare in Sweden 1980–2005. *Health Policy*. 2017 Jan;121(1):42–9.
210. Christensen B. Payment and attendance at general practice preventive health examinations. *Fam Med*. 1995 Sep;27(8):531–4.

211. Thomson S, Schang L, Chernew ME. Value-based cost sharing in the United States and elsewhere can increase patients' use of high-value goods and services. *Health Aff (Millwood)*. 2013;32(4):704–712.
212. Aaserud M, Dahlgren AT, Kösters JP, Oxman AD, Ramsay C, Sturm H. Pharmaceutical policies: effects of reference pricing, other pricing, and purchasing policies. *Cochrane Database Syst Rev*. 2006 Apr 19;(2):CD005979.
213. Morgan S, Hanley G, Greyson D. Comparison of tiered formularies and reference pricing policies: a systematic review. *Open Med*. 2009 Aug 4;3(3):e131–9.
214. Huskamp HA, Deverka PA, Epstein AM, Epstein RS, McGuigan KA, Frank RG. The effect of incentive-based formularies on prescription-drug utilization and spending. *N Engl J Med*. 2003;349(23):2224–2232.
215. Nexøe J, Kragstrup J, Rønne T. Impact of postal invitations and user fee on influenza vaccination rates among the elderly. A randomized controlled trial in general practice. *Scand J Prim Health Care*. 1997 Jun;15(2):109–12.
216. Hone T, Lee JT, Majeed A, Conteh L, Millett C. Does charging different user fees for primary and secondary care affect first-contacts with primary healthcare? A systematic review. *Health Policy Plan*. 2017 Jun 1;32(5):723–31.
217. Endgültige Erfolgsrechnung 2016: Alle KV-Träger. 2016.
218. HVB. Zusammenstellung der Schlussbilanzen 2015. 2015.
219. Mwachofi A, Al-Assaf AF. Health care market deviations from the ideal market. *Sultan Qaboos Univ Med J*. 2011;11(3):328–337.
220. Preker AS, Harding A, Travis P. Make or buy" decisions in the production of health care goods and services: new insights from institutional economics and organizational theory. *Bull World Health Organ*. 2000;78(6):779–790.
221. Rodrigues R, Leichsenring K, Winkelmann J. The "Make or Buy" decision in long-term care: Lessons for policy [Internet]. Vienna, Austria; 2014 May. Available from: http://www.euro.centre.org/data/1402907971_54043.pdf
222. Schwarting D, Weissbarth R. Make or buy: Three pillars of sound decision making. Price Waterhouse Coopers; 2011.
223. Parmigiani A. Concurrent Sourcing: When do firms both make and buy? [Internet]. University of Michigan; 2003. Available from: <http://pages.uoregon.edu/annepa/dissertation%20final%20full%20version.pdf>
224. OECD. Level of GDP per capita and productivity. OECD Statistics; 2017 Jun.
225. OECD. Unemployment rate. OECD Statistics; 2017.

226. Federal Ministry of Finance (BMF). Austrian Stability Programme: Update for the period 2016 to 2021 [Internet]. 2017 Apr. Available from: https://english.bmf.gv.at/budget-economic-policy/StaPro_April_2017_EN_2.pdf?5x0uhi
227. OECD. OECD Economic Outlook (Issue 1). Paris, France: OECD Publishing; 2017 Jun.
228. OECD. Labour force statistics by sex and age. 2016.
229. European Commission. The 2015 Ageing Report: Economic and budgetary for the 28 EU Member States (2013-2060) [Internet]. 2015. Available from: http://ec.europa.eu/economy_finance/publications/european_economy/2015/pdf/ee3_en.pdf
230. Acemoglu D, Restrepo P. Robots and Jobs: Evidence from US Labor Markets. 2017 [cited 2017 May 16]; Available from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2941263
231. Frey CB, Osborne MA. The future of employment: how susceptible are jobs to computerisation? Technol Forecast Soc Change. 2017;114:254–280.
232. World Bank. World Development Report 2016: Digital Dividends [Internet]. World Bank. [cited 2017 May 16]. Available from: <http://www.worldbank.org/en/publication/wdr2016>
233. OECD. New forms of work in the digital economy: 2016 Ministerial meeting on the digital economy - Technical Report. OECD Publishing; 2016.
234. Pew Research Centre. Shared, Collaborative and On Demand: The New Digital Economy. 2016.
235. European Commission. Flash Eurobarometer 438. Collaborative Platforms. 2016.
236. Vaughan R, Daverio R. Assessing the size and presence of the collaborative economy in Europe. Price Waterhouse Coopers (UK); 2016 Apr.
237. OECD. Key issues for digital transformation in the G20: Report prepared for a joint G20 German Presidency/OECD Conference. Berlin, Germany; 2017 Jan.
238. Hadzhieva E. Tax challenges in the digital economy: Study for the TAXE 2 Committee. European Parliament; 2016 Jun.
239. OECD. Addressing the Tax Challenges of the Digital Economy - Action 1: 2015 Report. OECD/G20 Base Erosion and Profit Sharing Project [Internet]. 2015. Available from: http://www.keepeek.com/Digital-Asset-Management/oecd/taxation/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report_9789264241046-en#.WNz7PIXyvGg#page3
240. Nagl W, Titelbach G, Valkova K. Digitalisierung der Arbeit: Substituierbarkeit von Berufen im Zuge der Automatisierung durch Industrie 4.0; Endbericht. 2017.
241. OECD. Automation and Independent Work in a Digital Economy [Internet]. 2016 May. Available from:

<http://www.oecd.org/employment/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf>

242. Hatfield I. Self-employment in Europe [Internet]. Institute for Public Policy Research; 2015 Jan. Available from: http://www.ippr.org/files/publications/pdf/self-employment-Europe_Jan2015.pdf?noredirect=1
243. Austria: Self-employed workers | Eurofound [Internet]. [cited 2017 May 18]. Available from: <https://www.eurofound.europa.eu/observatories/eurwork/comparative-information/national-contributions/austria/austria-self-employed-workers>
244. OECD. Employment - Self-employment rate - OECD Data [Internet]. 2015 [cited 2017 May 18]. Available from: <http://data.oecd.org/emp/self-employment-rate.htm>
245. Rotman D. The Relentless Pace of Automation. MIT Technol Rev. 2017;120(2).
246. Automation and anxiety [Internet]. The Economist. [cited 2017 May 17]. Available from: <http://www.economist.com/news/special-report/21700758-will-smarter-machines-cause-mass-unemployment-automation-and-anxiety>
247. World Economic Forum. The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution [Internet]. 2016 Jan. Available from: http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_Jobs.pdf
248. Eurostat. R&D expenditure in teh EU remained nearly stable at just over 2% of GDP [Internet]. 2016 Nov. Available from: <http://ec.europa.eu/eurostat/documents/2995521/7752010/9-30112016-BP-EN.pdf/62892517-8c7a-4f23-8380-ce33df016818>
249. The CSG: tax reform or social insurance reform? | Eurofound [Internet]. [cited 2017 Feb 15]. Available from: <https://www.eurofound.europa.eu/observatories/eurwork/articles/the-csg-tax-reform-or-social-insurance-reform>
250. OECD. Fiscal Sustainability of Health Systems [Internet]. Paris: Organisation for Economic Co-operation and Development; 2015 [cited 2017 May 30]. Available from: <http://www.oecd-ilibrary.org/content/book/9789264233386-en>
251. Wright A, Smith KE, Hellowell M. Policy lessons from health taxes: a systematic review of empirical studies. BMC Public Health. 2017;17(1):583.
252. Cashin C, Sparkes S, Bloom D. Earmarking for Health. [cited 2017 May 28]; Available from: <http://apps.who.int/iris/bitstream/10665/255004/1/9789241512206-eng.pdf>
253. Deloitte. Taxation and Investment in Italy in 2016 [Internet]. 2016. Available from: <https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/international-business-support/deloitte-cn-ibs-italy-tax-invest-en-2016.pdf>
254. Ferre F, Giulio de Belvis A, Valerio L, Longhi S, Lazzari A, Fattore G, et al. Health Systems in Transition - Italy: Health system review [Internet]. European Observatory on Health Systems and Policies; 2014.

Report No.: Vol 16. No. 4. Available from:
http://www.euro.who.int/__data/assets/pdf_file/0003/263253/HiT-Italy.pdf?ua=1

255. Do Tobin taxes actually work? [Internet]. The Economist. [cited 2017 May 17]. Available from: <http://www.economist.com/blogs/economist-explains/2013/09/economist-explains-1>
256. Q&A: What is the Tobin Tax on financial trading? BBC News [Internet]. 2013 Sep 10 [cited 2017 Feb 7]; Available from: <http://www.bbc.co.uk/news/business-15552412>
257. Taxation of the financial sector - Taxation and customs union - European Commission [Internet]. Taxation and customs union. [cited 2017 Feb 7]. Available from: http://ec.europa.eu/taxation_customs/taxation-financial-sector_en
258. Executive Office of the United States President. Artificial Intelligence, Automation, and the Economy. 2016 Dec.
259. Eurostat. Share of students in vocational programmes, 2014(%). 2014.
260. OCED. Pensions at a glance 2013: OCDE and G20 Indicators. OCDE Publishing; 2015.
261. Sozial Ministerium. BESCHÄFTIGUNGS-, REHABILITATIONS- UND PENSIONS-MONITORING. 2016 Jahr.
262. Kringos DS, Boerma WG, Hutchinson A, Saltman RB. Building primary care in a changing Europe [Internet]. World Health Organization, European Observatory on Health Systems and Policies; 2015. Available from: <http://www.healthrights.mk/healthrightsmk/pdf/Publikacii/Opsti/2015/1/BuildingPrimaryCareChangingEurope.pdf>
263. Stigler FL, Starfield B, Sprenger M, Salzer HJ, Campbell SM. Assessing primary care in Austria: room for improvement. Fam Pract. 2012;cms067.
264. Howick J, Cals JW, Jones C, Price CP, Plüddemann A, Heneghan C, et al. Current and future use of point-of-care tests in primary care: an international survey in Australia, Belgium, The Netherlands, the UK and the USA. BMJ Open. 2014 Aug 1;4(8):e005611.
265. Belgian GPs hardest working in Europe | Flanders Today [Internet]. [cited 2017 Jun 13]. Available from: <http://www.flanderstoday.eu/current-affairs/belgian-gps-hardest-working-europe>
266. Tiroler Gebietskrankenkasse, Betriebskrankenkasse der Austria Tabak, Sozialversicherungsanstalt der Bauern. HONORARORDNUNG für Ärzte für Allgemeinmedizin und Fachärzte. abgeschlossen zwischen der ÄRZTEKAMMER FÜR TIROL und dem HAUPTVERBAND DER ÖSTERREICHISCHEN SOZIALVERSICHERUNGSTRÄGER. [Internet]. 2016 Jan. Available from: <https://www.tgkk.at/cdscontent/load?contentid=10008.591401&version=1468935535>
267. Kringos D, Boerma W, Bourgueil Y, Cartier T, Dedeu T, Hasvold T, et al. The strength of primary care in Europe: an international comparative study. Br J Gen Pract J R Coll Gen Pract. 2013 Nov;63(616):e742-750.

268. Schäfer WL, Boerma WG, Kringos DS, De Maeseneer J, Gre\ s s, Heinemann S, et al. QUALICOPC, a multi-country study evaluating quality, costs and equity in primary care. *BMC Fam Pract*. 2011;12(1):115.
269. Julia J, Cheryl LD, Andrew MR, Ted A, Anne S, Susan D. Health Policy Brief: Pay-for-Performance. *Health Aff Oct*. 2012;11.
270. Charlesworth A, Davies A, Dixon J. Reforming payment for health care in Europe to achieve better value. Lond Nuffield Trust [Internet]. 2012 [cited 2017 May 10]; Available from: http://nuffield.dh.bytemark.co.uk/sites/files/nuffield/publication/120823_reforming-payment-for-health-care-in-europev2.pdf
271. OECD. Better Ways to Pay for Health Care. OECD Health Policy Studies [Internet]. Paris: OECD Publishing; 2016. Available from: <http://www.oecd-ilibrary.org/docserver/download/8116091e.pdf?expires=1486656883&id=id&acname=ocid71015720&checksum=8F735F64D98413774D7751E9EF861D01>
272. Eijkenaar F, Emmert M, Scheppach M, Schöffski O. Effects of pay for performance in health care: a systematic review of systematic reviews. *Health Policy*. 2013;110(2):115–130.
273. BUSSE R, BLÜMEL M. Payment systems to improve quality, efficiency, and care coordination for chronically ill patients: A framework and country examples [Internet]. The Commonwealth Fund; 2011 [cited 2017 May 12]. Available from: https://www.mig.tu-berlin.de/fileadmin/a38331600/2015.publications/2015_Busse_TripleAim.pdf
274. KCE. Voordelen, nadelen en haalbaarheid van het invoeren van “Pay for Quality” programma’s in België [Internet]. 2009. Available from: https://kce.fgov.be/sites/default/files/page_documents/d20091027350.pdf
275. Mossialos E, Wenzl M, Osborn R, Anderson C. 2015 International Profiles of Health Care Systems. Commonw Fund [Internet]. 2016 [cited 2017 Feb 6]; Available from: http://www.commonwealthfund.org/~media/files/publications/fund-report/2016/jan/1857_mossialos_intl_profiles_2015_v7.pdf
276. Obermann K, Müller P, Müller H-H, Schmidt B, Glazinski B. Understanding the German Health Care System [Internet]. Mannheim Institute of Public Health. Available from: http://miph.umm.uni-heidelberg.de/miph/cms/upload/pdf/GHCS_Kap._6.pdf
277. Busse R, Blümel M. Germany: health system review. *Health Syst Transit*. 2014;16(2):1–296.
278. Minder A, Schoenholzer H, Amiet M. Health Care Systems in Transition—Switzerland. Copenhagen: European Observatory on Health Care Systems; 2000.
279. Hofmarcher MM. The Austrian health reform 2013 is promising but requires continuous political ambition. *Health Policy*. 2014;118(1):8–13.
280. Hofmarcher MM. The Austrian health reform 2013 is promising but requires continuous political ambition. 2014;118(1):8–13.

281. BMGF. The Austrian DRG system [Internet]. 2010. Available from: https://www.google.at/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwi5rb2zn4DRAhVHVVRQKHURLBPcQFggeMAA&url=http%3A%2F%2Fbmggiis02.bmg.gv.at%2FBDBExtern%2FBrochureDownload.ashx%3Fsel%3DaWs4djY3bmJscS85ZXBRdGZBSG9DUT090&usg=AFQjCNEs30WI04nRWc1_fHUXD2ROoeGliA&sig2=YhSVFQ-Pz9qCDwLd93Qd-Q
282. Ministry Health and Women's Affairs. Geschäfts- und Tätigkeitsberichte der Landesgesundheitsfonds 2015 (Burgenland, Vorarlberg und Wien: 2014). IHS; 2017.
283. Belgium: Self-employed workers | Eurofound [Internet]. [cited 2017 Apr 21]. Available from: <https://www.eurofound.europa.eu/observatories/eurwork/comparative-information/national-contributions/belgium/belgium-self-employed-workers>
284. Kerr E, Siebrand V, Defever M, others. Health Care Systems in Transition—Belgium. Copenhagen: European Observatory on Health Care Systems; 2000.
285. About ABRO-BVRO [Internet]. [cited 2017 Apr 23]. Available from: https://www.abro-bvro.be/index.php?option=com_content&view=category&id=91&Itemid=846#MedicoMut
286. Van de Voorde C, Van den Heede K, Obyn C, Quentin W, Geissler A, Wittenbecher F, et al. Conceptual framework for the reform of the Belgian hospital payment system. KCE Rep Bruss Belg Health Care Knowl Cent KCE. 2014;
287. Toetreding tot het akkoord artsen-ziekenfondsen 2015 - RIZIV [Internet]. [cited 2017 Apr 21]. Available from: <http://www.riziv.fgov.be/nl/professionals/individuelezorgverleners/artsen/verzorging/Paginas/toetreding-akkoord-artsen-ziekenfondsen-2015.aspx#.WPo43mnyvRY>
288. Chevreur K, Berg Brigham K, Durand-Zaleski I, Hernandez-Quevedo C. Health System Review: France [Internet]. Vol. Vol. 17 No.3: 1-218. 2015. Available from: http://www.euro.who.int/__data/assets/pdf_file/0011/297938/France-HiT.pdf
289. Johnson JA, Stoskopf C, Shi L. Comparative Health Systems. Jones & Bartlett Learning; 2017. 612 p.
290. The National Association of Statutory Health Insurance Physicians and the regional Associations of Statutory Health Insurance Physicians [Internet]. [cited 2017 Apr 24]. Available from: http://www.kbv.de/html/about_us.php
291. Czypionka T, Riedel M, Röhring G. Quality assurance in medical practices: A European perspective. Health Syst Watch. 2006;
292. Busse R, Stargardt T, Schreyögg J. Determining the “Health Benefit Basket” of the Statutory Health Insurance scheme in Germany. Eur J Health Econ. 2005 Nov;6(Suppl 1):30–6.
293. Siciliani L, Chalkley M, Gravelle H. Policies towards hospital and GP competition in five European countries. Health Policy. 2017 Feb 1;121(2):103–10.

294. Over 90% of Dutch doctors unhappy about health insurance contracts [Internet]. DutchNews.nl. 2015 [cited 2017 May 5]. Available from: <http://www.dutchnews.nl/news/archives/2015/03/over-90-of-dutch-doctors-unhappy-about-health-insurance-contracts/>
295. Wammes J, Jeurissen P, Westert GP. The Dutch Health System, 2014 [Internet]. Radboud University Medical Center; 2014. Available from: [http://www.nvag.nl/afbeeldingen/2015/nscholing/Netherlands%20Health%20Care%20System%202014%20\(PDF\).pdf](http://www.nvag.nl/afbeeldingen/2015/nscholing/Netherlands%20Health%20Care%20System%202014%20(PDF).pdf)
296. Kroneman M, Boerma W, van den Berg M, Groenwegen P, de Jong J, van Ginnehen E. The Netherlands health system review. *Health Systems in Transition*. 2016;18(2).
297. van Dijk CE, Venema B, de Jong JD, de Bakker DH. Market competition and price of disease management programmes: an observational study. *BMC Health Serv Res*. 2014;14(1):510.
298. Varkevisser M, Schut FT. The impact of geographic market definition on the stringency of hospital merger control in Germany and the Netherlands. *Health Econ Policy Law*. 2012;7(03):363–381.
299. WHO | Hospital payment systems based on diagnosis-related groups: experiences in low- and middle-income countries [Internet]. WHO. [cited 2017 Apr 23]. Available from: <http://www.who.int/bulletin/volumes/91/10/12-115931/en/>
300. Comprehensive Asset Liability Management. Effizienzpotenziale in der Sozialversicherung. 2016.
301. Bundesministerium Für Gesundheit. Bepunktungsmodell für den spitalsambulanten Bereich - L K F - ambulant MODELL 2017. 2016 Jul.
302. Nolte E, Knai C, Hofmarcher M, Conklin A, Erler A, Elissen A, et al. Overcoming fragmentation in health care: chronic care in Austria, Germany and The Netherlands. *Health Econ Policy Law*. 2012;7(01):125–146.
303. Cypionka T, Röhrling G. Analyse der Reformpool-Aktivität in Österreich: Wie viel Reform ist im Reformpool? *Health System Watch* 2. IHS; 2009.
304. Pavolini E, Guillén A. Health care systems in Europe under austerity: Institutional reforms and performance [Internet]. Springer; 2013. Available from: https://books.google.co.uk/books?hl=en&lr=&id=ZuKxAgAAQBAJ&oi=fnd&pg=PP1&dq=health+care+systems+in+europe+under+austerity&ots=iG_i39yN0J&sig=cGF9RTnRfiDkP7ZImSKl63ddAu8
305. pmhdev. What are disease management programs (DMPs)? *PubMed Health* [Internet]. 2016 Dec 30 [cited 2017 Jun 12]; Available from: <https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0072596/>
306. The GP Training Programme [Internet]. [cited 2017 Jul 11]. Available from: <https://gprecruitment.hee.nhs.uk/Recruitment/Training>
307. Practitioners TRAC of G. RACGP - Vocational Training Pathway [Internet]. [cited 2017 Jul 11]. Available from: <http://www.racgp.org.au/becomingagp/students/vocational-training-pathway/>

308. Become a general practitioner [Internet]. [cited 2017 Jul 11]. Available from: <https://www.myhealthcareer.com.au/become-a-general-practitioner>
309. Dourgnon P, Guillaume S, Naiditch M, Ordonneau C. Introducing Gate Keeping in France: first assessment of the preferred doctor scheme reform [Internet]. 2007 Jul. Available from: <http://www.irdes.fr/EspaceAnglais/Publications/IrdesPublications/QES124.pdf>
310. Pedersen KM, Andersen JS, Søndergaard J. General Practice and Primary Health Care in Denmark. *J Am Board Fam Med*. 2012 Mar 1;25(Suppl 1):S34–8.
311. Forde I, Nader C, Socha-Dietrich K, Oderkirk J, Colombo F. PRIMARY CARE REVIEW OF DENMARK. 2016; Available from: <http://www.oecd.org/health/health-systems/Primary-Care-Review-of-Denmark-OECD-report-December-2016.pdf>
312. Mossialos E, Djordjevic A. International Profiles of Health Care Systems [Internet]. Commonwealth Fund; 2017. Available from: http://www.commonwealthfund.org/~media/files/publications/fund-report/2017/may/mossialos_intl_profiles_v5.pdf
313. Campbell SM, Roland MO, Buetow SA. Defining quality of care. *Soc Sci Med*. 2000 Dec 1;51(11):1611–25.
314. Smith PC. Performance measurement for health system improvement: experiences, challenges and prospects [Internet]. Cambridge University Press; 2009 [cited 2017 Mar 9]. Available from: https://books.google.co.uk/books?hl=en&lr=&id=c4CsWZYVOTwC&oi=fnd&pg=PR9&dq=measuring+health+system+performance+smith+mossialos&ots=1kGo5xsmJt&sig=XWhB_2avAMPnoI5nXSgzPx5mhLU
315. Friedman MA. Issues in Measuring and Improving Health Care Quality. *Health Care Financ Rev*. 1995;16(4):1–13.
316. Jones P, Shepherd M, Wells S, Le Fevre J, Ameratunga S. Review article: what makes a good healthcare quality indicator? A systematic review and validation study. *Emerg Med Australas EMA*. 2014 Apr;26(2):113–24.
317. Understanding Quality Measurement [Internet]. [cited 2017 Mar 9]. Available from: </professionals/quality-patient-safety/quality-resources/tools/chtoolbox/understand/index.html>
318. Arah OA, Westert GP, Hurst J, Klazinga NS. A conceptual framework for the OECD health care quality indicators project. *Int J Qual Health Care*. 2006;18(suppl 1):5–13.
319. Campbell SM, Braspenning J, Hutchinson A, Marshall M. Research methods used in developing and applying quality indicators in primary care. *Qual Saf Health Care*. 2002;11(4):358–364.
320. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q*. 1966;44(3):166–206.
321. Gemmill M. Pay-for-Performance in the US: What lessons for Europe? *EUROHEALTH-Lond*. 2007;13(4):21.

322. Goodwin N, Dixon A, Poole T, Raleigh V. Improving the quality of care in general practice. Lond Kings Fund. 2011;
323. Mainz J, Krog BR, Bjørnshave B, Bartels P. Nationwide continuous quality improvement using clinical indicators: the Danish National Indicator Project. *Int J Qual Health Care*. 2004;16(suppl 1):i45–i50.
324. Goodwin N, Dixon A, Poole T, Raleigh V. Improving the quality of care in general practice. Lond Kings Fund. 2011;
325. Stange KC. Quality indicators for general practice: A practical guide for health professionals and managers. Edited by Martin Marshall, Stephen Campbell, Jenny Hacker and Martin Roland [Internet]. ISQHC; 2002 [cited 2017 Mar 10]. Available from: <http://intqhc.oxfordjournals.org/content/14/4/340.short>
326. Desirable Attributes of a Quality Measure | National Quality Measures Clearinghouse [Internet]. [cited 2017 Mar 13]. Available from: <https://www.qualitymeasures.ahrq.gov/help-and-about/quality-measure-tutorials/desirable-attributes-of-a-quality-measure>
327. Lindenauer PK, Remus D, Roman S, Rothberg MB, Benjamin EM, Ma A, et al. Public Reporting and Pay for Performance in Hospital Quality Improvement. *N Engl J Med*. 2007 Feb 1;356(5):486–96.
328. Organization WH, others. Paying for Performance in Health Care Implications for Health System Performance and Accountability: Implications for Health System Performance and Accountability [Internet]. OECD Publishing; 2014 [cited 2017 Mar 13]. Available from: https://books.google.co.uk/books?hl=en&lr=&id=JLm9BAAAQBAJ&oi=fnd&pg=PR9&dq=P4P+Program+Design.+In+Paying+for+performance+in+health+care:+implications+for+health+system+performance+and+accountability&ots=VamfDjwpKE&sig=q0vZ0LDEcwx7wEobhr_t7eUnVBg
329. Robinowitz DL, Dudley RA. Public reporting of provider performance: can its impact be made greater? *Annu Rev Public Health*. 2006;27:517–536.
330. Mannion R, Davies H, Marshall M. Impact of star performance ratings in English acute hospital trusts. *J Health Serv Res Policy*. 2005;10(1):18–24.
331. Schneider EC, Epstein AM. Influence of cardiac-surgery performance reports on referral practices and access to care—a survey of cardiovascular specialists. *N Engl J Med*. 1996;335(4):251–256.
332. Narins CR, Dozier AM, Ling FS, Zareba W. The influence of public reporting of outcome data on medical decision making by physicians. *Arch Intern Med*. 2005;165(1):83–87.
333. Burack JH, Impellizzeri P, Homel P, Cunningham JN. Public reporting of surgical mortality: a survey of New York State cardiothoracic surgeons. *Ann Thorac Surg*. 1999;68(4):1195–1200.
334. Julia J, Cheryl LD, Andrew MR, Ted A, Anne S, Susan D. Health Policy Brief: Pay-for-Performance. *Health Aff Oct*. 2012;11.
335. Hibbard JH, Stockard J, Tusler M. Does Publicizing Hospital Performance Stimulate Quality Improvement Efforts? *Health Aff (Millwood)*. 2003 Mar 1;22(2):84–94.

336. The National Board of Health and Welfare [Internet]. [cited 2017 Mar 14]. Available from: <http://www.socialstyrelsen.se/english>
337. Thor J, Mascher K, Lindblad S. Swedish National Quality Registries and Their Contribution to the Best Possible Care for Patient [Internet]. 2016 Apr 15. Available from: http://aws-cdn.internationalforum.bmj.com/pdfs/2016_G2.pdf
338. Categories - Nationella Kvalitetsregister [Internet]. [cited 2017 Mar 14]. Available from: <http://www.kvalitetsregister.se/englishpages/findaregistry/categories.2034.html>
339. OECD. OECD Review of Health Care Quality: Sweden Raising Standards [Internet]. 2013. Available from: <http://www.oecd-ilibrary.org/docserver/download/8113231e.pdf?expires=1486049446&id=id&accname=ocid71015720&checksum=76D1CBE1E15177EDE1CF4D1487DE8A6F>
340. Swedish Association of Local Authorities and Regions, National Board of Health and Welfare. Quality and Efficiency in Swedish Health Care: Regional Comparisons 2012 [Internet]. 2013. Available from: <http://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/19072/2013-5-7.pdf>
341. OECD. OECD Reviews of Health Care Quality: United Kingdom 2016 [Internet]. Paris: Organisation for Economic Co-operation and Development; 2016 [cited 2017 Mar 14]. Available from: <http://www.oecd-ilibrary.org/content/book/9789264239487-en>
342. How well is your health system working? · CIHI [Internet]. [cited 2017 Feb 9]. Available from: <https://yourhealthsystem.cihi.ca/hsp/inbrief;jsessionid=hWPNz35vlevMBCHqzHeARaqp.yhs?lang=en>
343. Werner RM, Kolstad JT, Stuart EA, Polsky D. The effect of pay-for-performance in hospitals: lessons for quality improvement. *Health Aff (Millwood)*. 2011;30(4):690–698.
344. Partel K. title Can we improve the health system with pay-for-performance? 2014 [cited 2017 Mar 13]; Available from: https://thedeobleinstitute.org/system/files/docs/publications/deeble_issues_brief_no_5_partel_k_can_we_improve_the_health_system_with_pay-for-performance.pdf
345. Hussey PS, Mattke S, Morse L, Ridgely MS. Evaluation of the use of AHRQ and other quality indicators. *Prep Agency Healthc Res Qual Rockv MD RAND Health*. 2007;
346. Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. The effect of financial incentives on the quality of health care provided by primary care physicians. *Cochrane Database Syst Rev*. 2011 Sep 7;(9):CD008451.
347. Eijkenaar F. Pay-for-performance for healthcare providers: Design, performance measurement, and (unintended) effects [Internet]. 2013 [cited 2017 Mar 13]. Available from: <http://repub.eur.nl/pub/50040/>
348. Kristensen SR, Meacock R, Turner AJ, Boaden R, McDonald R, Roland M, et al. Long-term effect of hospital pay for performance on mortality in England. *N Engl J Med*. 2014;371(6):540–548.

349. Chang R-E, Lin S-P, Aron DC. A pay-for-performance program in Taiwan improved care for some diabetes patients, but doctors may have excluded sicker ones. *Health Aff (Millwood)*. 2012;31(1):93–102.
350. McDonald R, Roland M. Pay for performance in primary care in England and California: comparison of unintended consequences. *Ann Fam Med*. 2009;7(2):121–127.
351. Doran T, Kontopantelis E, Valderas JM, Campbell S, Roland M, Salisbury C, et al. Effect of financial incentives on incentivised and non-incentivised clinical activities: longitudinal analysis of data from the UK Quality and Outcomes Framework. *Bmj*. 2011;342:d3590.
352. Iezzoni LI. Measuring the severity of illness and case mix. *Provid Qual Care Chall Clin*. 1989;70–105.
353. Campbell SM, Reeves D, Kontopantelis E, Sibbald B, Roland M. Effects of pay for performance on the quality of primary care in England. *N Engl J Med*. 2009;361(4):368–378.
354. British Medical Association. Quality and Outcomes Framework (QoF): Guidance for NHS and GP Practices 2014/15. 2015.
355. NHS Employers. Quality and Outcomes Framework [Internet]. 2010 Feb. Available from: <http://www.nhsemployers.org/your-workforce/primary-care-contacts/general-medical-services/quality-and-outcomes-framework>
356. Health & Social Care Information Centre. Quality and Outcomes Framework - Prevalance, achievements and exceptions report. 2015.
357. Kecmanovic M, Hall JP. The use of financial incentives in Australian general practice. *Med J Aust*. 2015;202(9):488–91.
358. Cashin C, Chi Y-L, Smith PC, Borowitz M, Thomson S. Health Provider P4P and strategic health purchasing. In: *Paying for performance in health care: implications for health system performance and accountability*. Maidenhead [u.a]: Open Univ. Press; 2014. (European Observatory on Health Systems and Policies series).
359. Australian National Audit Office. Practice Incentives Program: Audit Report no.5 2010-11. Canberra: Commonwealth of Australia; 2010.
360. Chi Y-L. Germany: Disease Management Programs. In: *Paying for performance in health care: implications for health system performance and accountability*. Maidenhead [u.a]: Open Univ. Press; 2014. p. 157–71. (European Observatory on Health Systems and Policies series).
361. Stock S, Starke D, Altenhofen L, Hansen L. Disease-management programs can improve quality of care for the chronically ill, even in a weak primary care system: a case study from Germany. *En Ligne* [Httpwww Commonwealthfund Org~/media/files/publications/issue-brief/2011/nov/1560stockdiseasemgmtprogsimprovequalitygermanyintlbriefv2.Pdf](http://www.Commonwealthfund.Org~/media/files/publications/issue-brief/2011/nov/1560stockdiseasemgmtprogsimprovequalitygermanyintlbriefv2.Pdf) *Commonw Fund*. 2011;24.

362. Cashin C, editor. P4P Program Design. In: Paying for performance in health care: implications for health system performance and accountability. Maidenhead [u.a]: Open Univ. Press; 2014. (European Observatory on Health Systems and Policies series).
363. Schmidt AE, Tarver L, Ruppe G. Innovations in Health Care Quality Measurement and Management in Austria. Eur Cent Soc Welf Policy Res Vienna [Internet]. 2012; Available from: http://www.euro.centre.org/data/1384355081_34166.pdf
364. Czásnyó I. Regional Management of Health in Austria. 2015 May 27; High Level Meeting of Health Experts of the Visegrad Group and CEE Countries - Bratislava,.
365. Bundesministerium für Gesundheit. Austrian Health Care Key Facts 2013 [Internet]. 2013 [cited 2016 Nov 30] p. 1–33. Available from: http://www.bmgf.gv.at/cms/home/attachments/3/4/4/CH1066/CMS1291414949078/austrian_health_care_key_facts_2013.pdf
366. Excerpt from the 2005 Health Reform Act, Fed. Law Gaz. I No. 179/2004, in the version Fed. Law Gaz. I No. 81/2013. Federal Act on the Quality of Health Care (Health Care Quality Act – Gesundheitsqualitätsgesetz – GQG) [Internet]. 2013. Available from: https://www.bmgf.gv.at/cms/home/attachments/2/8/0/CH1063/CMS1396521704766/health_care_quality_act.pdf
367. GÖG. Quality strategy for the Austrian healthcare system. 2010.
368. Ministry of Health and Women’s Affairs. Austrian Inpatient Quality Indicators (A-IQI) - Measuring the quality of results through routine data [Internet]. 2014. Available from: <http://bmg.cms.apa.at/cms/preview/attachments/4/1/6/CH1619/CMS1470385135800/a-iqi.pdf>
369. Bundesministerium für Gesundheit und Frauen. Health Targets Austria [Internet]. Vienna: BMGF; 2016. Available from: http://www.gesundheitsziele-oesterreich.at/wp-content/uploads/2016/12/Rahmengesundheitsziele_EN_Version_IV_20161028_neues-LOGO_BMGF-1.pdf
370. ÖQMed: Wissenschaftlicher Beirat [Internet]. [cited 2017 Jun 2]. Available from: <http://www.oeqmed.at/index.php?id=94>
371. ÖQMed. Wissenschaftlicher Beirat: Evaluierungskriterien“ Beschlussdatum: 23.03.2011. 2011 Mar.
372. Zaman MJ, Stirling S, Shepstone L, Ryding A, Flather M, Bachmann M, et al. The association between older age and receipt of care and outcomes in patients with acute coronary syndromes: a cohort study of the Myocardial Ischaemia National Audit Project (MINAP). Eur Heart J. 2014 Jun 14;35(23):1551–8.
373. Rao KK, Enriquez JR, de Lemos JA, Alexander KP, Chen AY, McGuire DK, et al. Use of aldosterone antagonists at discharge after myocardial infarction: Results from the National Cardiovascular Data Registry Acute Coronary Treatment and Intervention Outcomes Network (ACTION) Registry–Get with the Guidelines (GWTG). Am Heart J. 2013 Oct;166(4):709–15.

374. Bramlage P, Messer C, Bitterlich N, Pohlmann C, Cuneo A, Stammwitz E, et al. The effect of optimal medical therapy on 1-year mortality after acute myocardial infarction. *Heart Br Card Soc.* 2010 Apr;96(8):604–9.
375. Rasmussen S, Abildstrom SZ, Rasmussen JN, Gislason GH, Schramm TK, Folke F, et al. Hospital Variation in Use of Secondary Preventive Medicine After Discharge for First Acute Myocardial Infarction During 1995–2004. *Med Care.* 2008 Jan;46(1):70–7.
376. Krumholz HM, Radford MJ, Wang Y, Chen J, Heiat A, Marciniak TA. National use and effectiveness of beta-blockers for the treatment of elderly patients after acute myocardial infarction: National Cooperative Cardiovascular Project. *JAMA J Am Med Assoc.* 1998 Aug 19;280(7):623–9.
377. Alexandrescu R, Bottle A, Jarman B, Aylin P. Current ICD10 codes are insufficient to clearly distinguish acute myocardial infarction type: a descriptive study. *BMC Health Serv Res.* 2013 Nov;13(1):468.
378. Cooper Z, Gibbons S, Jones S, McGuire A. Does Hospital Competition Save Lives? Evidence From The English NHS Patient Choice Reforms*. *Econ J.* 2011 Aug 21;121(554):F228–60.
379. Rathore SS, Curtis JP, Chen J, Wang Y, Nallamothu BK, Epstein AJ, et al. Association of door-to-balloon time and mortality in patients admitted to hospital with ST elevation myocardial infarction: national cohort study. *BMJ.* 2009 May;338(may19 1):b1807–b1807.
380. Keeley EC, Boura JA, Grines CL. Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. *Lancet.* 2003 Jan;361(9351):13–20.
381. Pena ME, Fox JM, Southall AC, Dunne RB, Szpunar S, Kler S, et al. Effect on efficiency and cost-effectiveness when an observation unit is managed as a closed unit vs an open unit. *Am J Emerg Med.* 2013 Jul;31(7):1042–6.
382. OECD. Health at a Glance 2015 - {OECD} Indicators. 2015.
383. Core Group HDP2. Hospital Data Project Phase 2. 2008.
384. Mueller D. Public Choice III. Cambridge University Press; 2003.
385. Shain M, Roemer MI. Hospital costs relate to the supply of beds. *J Occup Environ Med.* 1959;1(9):518.
386. Delamater PL, Messina JP, Grady SC, WinklerPrins V, Shortridge AM. Do more hospital beds lead to higher hospitalization rates? a spatial examination of Roemer's Law. *PLoS One.* 2013;8(2):e54900.
387. Czypionka T, Ulinski S, Berger M. Skaleneffekte intermediärer Versorgungsformen. IHS Final Report. 2013 Mar.
388. Czypionka T, Müllbacher S, Platzer P. Kooperationen in der ambulanten medizinischen Versorgung. IHS Final Report. 2012 Sep.

389. Hauptverband der Österreichischen Sozialversicherungsträger. Vertragsärztinnen und –ärzte in Österreich. Bestandsaufnahme und Analyse. 2017 Mar.
390. Haidinger G, Eckert-Graf L, Wirgler PE, Weber M, Csaicsich G, Meznik C. Selbstzuweiser im Spital– wie viele könnten im primär-medizinischen Bereich behandelt werden. *Z Allg.* 2013;89(1):41–6.
391. GÖG. Zielsteuerung Gesundheit. Monitoringbericht 2017 I/2017. 2017 upcoming.
392. Jonas S, Raleigh V, Foot C, Mountford J. Measuring quality along care pathways. 2012; The King’s Fund.
393. Docteur E. Measuring the Quality of Care in Different Settings. *Health Care Financ Rev.* 2001;22(3):59–70.
394. Couturier B, Carrat F, Hejblum G. A systematic review on the effect of the organisation of hospital discharge on patient health outcomes. *BMJ Open.* 2016 Dec 21;6(12):e012287.
395. Leppin AL, Gionfriddo MR, Kessler M, Brito JP, Mair FS, Gallacher K, et al. Preventing 30-day hospital readmissions: a systematic review and meta-analysis of randomized trials. *JAMA Intern Med.* 2014 Jul;174(7):1095–107.
396. Reibnegger G, Caluba H-C, Ithaler D, Manhal S, Neges HM, Smolle J. Progress of medical students after open admission or admission based on knowledge tests. *Med Educ.* 2010;44(2):205–214.
397. Kraft HG, Lamina C, Kluckner T, Wild C, Prodingner WM. Paradise lost or paradise regained? Changes in admission system affect academic performance and drop-out rates of medical students. *Med Teach.* 2013;35(5):e1123–e1129.
398. Reibnegger G, Caluba H-C, Ithaler D, Manhal S, Neges HM, Smolle J. Dropout rates in medical students at one school before and after the installation of admission tests in Austria. *Acad Med.* 2011;86(8):1040–1048.
399. Statistics Austria. Auswertung der Wegzüge von Personen mit Abschluss eines Studiums an einer öffentlichen Universität. 2016.
400. Rechnungshof. Ergebnis der Überprüfung durch den Rechnungshof gemäß Art. 127b B-VG und §20a RHG. Ärztekammer für Wien – Wohlfahrtsfonds. GZ 003.677/004-382/11. 2011.
401. Petek Šter M, Švab I, Živčec Kalan G. Factors related to consultation time: experience in Slovenia. *Scand J Prim Health Care.* 2008;26(1):29–34.
402. Deveugele M, Derese A, van den Brink-Muinen A, Bensing J, De Maeseneer J. Consultation length in general practice: cross sectional study in six European countries. *Bmj.* 2002;325(7362):472.
403. Riedel M, Röhrling G. Gender-Unterschiede bei Beschäftigten im österreichischen Gesundheitswesen. *Health System Watch* 4/2016.; 2016.
404. Österreichische Ärztekammer. Spitalsärzte: Wachsende Arbeitsverdichtung – steigender Zeitdruck, Presseerklärung, 27.04.2016. 2016.

405. Kiesel F. Ärztemangel oder Nachbesetzungsprobleme bei Arztstellen: Nur ein semantischer Unterschied? Soziale Sicherheit 2015(5), 224-227.; 2015.
406. Zsifkovits J. Ermittlung von Personalbedarf in der Pflege und MTD – Rahmenbedingungen, Methodenvergleich und Ableitungen für deren Anwendungen. Gesundheit Österreich GmbH, Vortrag am 6. Tag der Gesundheitsberufe, 12.Mai 2016. 2016.
407. Lehmann Y. Bestandsaufnahme der Ausbildung in den Gesundheitsfachberufen im europäischen Vergleich, Band 15 der Reihe Berufsbildungsforschung, Bundesministerium für Bildung und Forschung, Bonn. 2014.
408. Riedel M, Röhrling G. Nicht-ärztliche Gesundheitsberufe. Projektbericht; Institut für Höhere Studien - IHS; Wien.
409. Riedel M, Röhrling G, Cypionka T, Kasper S. A gap analysis for future supply of and demand for psychiatrists in Austria. J Ment Health Policy Econ. 2014;17(1):9–18.
410. Gregoritsch J. Frauenärztinnen bevorzugt - Warum? Ein etwas anderer Kommentar zum Erkenntnis des VfGH. Soziale Sicherheit 3/2015, 100-106.; 2015.
411. Phillippi. The Electronic Health Record (ELGA) in Austria. Vienna: ELGA GmbH; 2015.
412. Kiraly M. „ELGA“: Elektronische Gesundheitsakte in Österreich. [Vienna]: Wirtschaftsuniversität Wien; 2015.
413. ELGA GmbH. Die elektronische Gesundheitsakte – ELGA Überblick / Fahrplan 03.03.2017. 2017.
414. WGKK. ELGA - The electronic health file [Internet]. WGKK Wiener Gebietskrankenkasse. Available from:
<http://www.wgkk.at/portal27/wgkkportal/content?contentid=10007.755277&viewmode=content>
415. Organisation for Economic Co-Operation and Development. Health Expenditure and Financing. OECD.Stat; 2017.
416. Organisation for Economic Co-Operation and Development. Pharmaceutical Sales. OECD.Stat; 2017.
417. IMS Institute for Healthcare Informatics. The Role of Generic Medicines in Sustaining Healthcare Systems: A European Perspective [Internet]. 2015 Jun. Available from:
https://www.imshealth.com/files/web/IMSH%20Institute/Healthcare%20Briefs/IIHI_Generics_Healthcare_Brief.pdf
418. Pharmig. Facts & Figures 2016: Medicinal Products and Health Care in Austria. 2016.
419. Pharmig. Daten & Fakten 2016 - Arzneimittel und Gesundheitswesen in Österreich [Internet]. 2016. Available from:
http://www.pharmig.at/uploads/Daten_und_Fakten_2016_deutsch_web_15621_DE.pdf

420. Martikainen JE, Maljanen T, Koskinen H, Vogler S. Impact of Generic Price Linkage System and Reference Price System on prices of pharmaceuticals – comparison of Austria and Finland. *J Pharm Policy Pract.* 2015;8(Suppl 1):P2.
421. Vogler S, Schneider P, Zimmermann N. Price comparison of high-cost medicines 2015. Vienna; 2016.
422. Vogler S, Zimmermann N, Habl C, Mazag J. The role of discounts and loss leaders in medicine procurement in Austrian hospitals-a primary survey of official and actual medicine prices. *Cost Eff Resour Alloc.* 2013;11(1):15.
423. Tanne J. US branded drug makers pay to prevent generic competition. *BMJ.* 2008;336(7656):1266–7.
424. Vogler S, Paris V, Ferrario A, Wirtz V, de Joncheere K, Schneider P, et al. How Can Pricing and Reimbursement Policies Improve Affordable Access to Medicines? Lessons Learned from European Countries. 2017;
425. World Health Organisation. How can voluntary cross-border collaboration in public procurement improve access to health technologies in Europe? 2012;
426. Hawlik K, Devalière A. Access to High-priced Medicines in Hospital Settings in Europe- A study in four European Countries. 2016;
427. World Health Organisation. Operational principles for good pharmaceutical procurement. 1999 [cited 2017 Jan 30]; Available from: http://wwwlive.who.int/entity/hiv/pub/amds/who_edm_par_may99.pdf
428. Kanavos P. Tender systems for outpatient pharmaceuticals in the European Union: Evidence from the Netherlands and Germany. 2012;
429. Bedau M, Tugendreich B. Are German health insurers obliged to purchase drugs by public tender? 2007;
430. Leopold C, Habl C, Vogler S. Tendering of Pharmaceuticals in EU Member States and EEA countries: Results from the country survey (final versions). https://ppri.goeg.at/Downloads/Publications/Final_Report_Tendering_June_08.pdf; 2008 Jun.
431. GÖG/ÖBIG. Pharmaceutical Pricing and Reimbursement Policies [Internet]. 2007 [cited 2017 Oct 2]. Available from: http://ec.europa.eu/health/ph_information/dissemination/hsis/PPRI_glossary_en.pdf
432. Mertens M, Carbonelle N. Public procurement of medicinal products- Common legislation but diverging implementation approaches throughout the EU. 2014;
433. Kanavos P, Seeley L, Vantoros S. Tender systems for outpatient pharmaceuticals in the European Union: Evidence from the Netherlands, Germany and Belgium [Internet]. 2009 Oct. Available from: file:///H:/tendering_systems_en.pdf

434. Henry D, Lang D, Hill S. Priority Medicines for Europe and the World “A Public Health Approach to Innovation.” 2013;
435. Burt J. Lessons to be learnt? - An overview of Tendering Processes for medicines across Europe. 2011;
436. Bonser A, Kanavos P, Taylor D. Tender Loving Care? Purchasing medicines for continuing therapeutic improvement and better health outcomes. 2016 [cited 2017 Jan 30]; Available from: <http://eprints.lse.ac.uk/67824/1/Tender%20Loving%20Care%20embargo%2010%20Nov%202016.pdf>
437. Kanavos P, Seeley L, Vondoros S. Tender systems for outpatient pharmaceuticals in the European Union: Evidence from the Netherlands, Germany and Belgium. 2009;
438. Lindstädt H. Drug Discount Contracts in Germany: Will we be facing a claim game? 2010;
439. Pro Generika. Effects of tendering on the generics industry in Germany. 2013;
440. IMS Institute for Healthcare Informatics. The Role of Generic Medicines in Sustaining Healthcare Systems: A European Perspective. 2015;
441. Carradinha H. Tendering short-term pricing policies and the impact on patients, governments and the sustainability of the generic medicines industry. 2009;
442. Kanavos P. Reimbursement policies, coverage decisions and procurement strategies. 2016.
443. Petrou P. Long-term effect of tendering on prices of branded pharmaceutical products. 2016;
444. Carone G, Schwierz C, Xavier A. Cost-containment policies in public pharmaceutical spending in the EU. 2012;
445. Schulenburg F von der, Kanavos P, Vondoros S. The effects of drug market regulation on pharmaceutical prices in Europe: overview and evidence from the market of ACE inhibitors. 2011;
446. Dylst, Pieter, Vulto, Arnold, Simoens, Steven. Tendering for outpatient prescription pharmaceuticals: What can be learned from current practices in Europe? 2011;
447. Simoens S. A review of generic medicine pricing in Europe. 2011;
448. Dylst P, Simoens S. Generic Medicine Pricing Policies in Europe: Current Status and Impact. 2010;
449. Adriaens C, Soete E. Reimbursement of medicines in Belgium. 2010.
450. Vogler S, Habl C, Leopold C, Mazag J, Morak S, Zimmerman N. PHIS Hospital Pharma Report. 2010;
451. Dreyer J. The Norwegian healthcare system and Market. 2014;
452. Mack A. Bisimilars, purchasing systems and impact of tenders in Norway. 2015.
453. Norwegian Medicines Agency. PPRI Pharma Profile- Norway 2015. 2015;

454. WHO | Pharmacovigilance [Internet]. WHO. [cited 2017 Jun 27]. Available from: http://www.who.int/medicines/areas/quality_safety/safety_efficacy/pharmvigi/en/
455. Zimmerm N, Vogler S. PPRI/PHIS Pharma Profile [Internet]. Gesundheit Österreich GmbH; 2012 Dec. Available from: http://whocc.goeg.at/Literaturliste/Dokumente/CountryInformationReports/PPRI_PHIS%20Pharma%20Profile%20Austria_2012_final.pdf
456. BUNDESGESETZBLATT FÜR DIE REPUBLIK ÖSTERREICH [Internet]. 2017 Apr. Available from: https://www.ris.bka.gv.at/Dokumente/BgblAuth/BGBLA_2017_I_49/BGBLA_2017_I_49.pdf
457. Bundesministerin für Gesundheit und Frauen. Verordnung der Bundesministerin für Gesundheit und Frauen über Höchstaufschläge im Arzneimittelgroßhandel 2004 [Internet]. Available from: http://www.bmgf.gv.at/cms/home/attachments/0/2/1/CH1224/CMS1288333891695/verordnung_ueber_hoehstaufschlaege_im_arzneimittelgrosshandel.pdf
458. Melck B. Austria: Hastily implemented legal changes hit pharma industry. IHS Markit [Internet]. 2017 May 3; Available from: <http://blog.ihs.com/austria-hastily-implemented-legal-changes-hit-pharma-industry>
459. Ministry of Social Affairs and Public Health. The Grand Duchy of Luxemburg Joins Belgium-Netherlands Initiative on Orphan Drugs | Maggie De Block [Internet]. 2015 [cited 2016 Nov 30]. Available from: <http://www.deblock.belgium.be/fr/grand-duchy-luxemburg-joins-belgium-netherlands-initiative-orphan-drugs>
460. BMI. Upsides To Small Joint Medicine Procurement Agreements For Drugmakers, Pharmaceuticals and Healthcare [Internet]. 2016 [cited 2016 Nov 30]. Available from: <http://www.bmiresearch.com/news-and-views/upsides-to-small-joint-medicine-procurement-agreements-for-drugmakers>
461. European Commission. Joint Procurement Agreement - List of EU countries - European Commission [Internet]. [cited 2016 Nov 30]. Available from: http://ec.europa.eu/health/preparedness_response/joint_procurement/jpa_signature_en.htm
462. Morgan SG, Vogler S, Wagner AK. Payers' experiences with confidential pharmaceutical price discounts: A survey of public and statutory health systems in North America, Europe, and Australasia. *Health Policy*. 2017;121(4):354–62.
463. Rémuzat C, Urbinati D, Mzoughi O, El Hammi E, Belgaied W, Toumi M. Overview of external reference pricing systems in Europe. *J Mark Access Health Policy*. 2015;3.
464. Salas-Vega S, Iliopoulos O, Mossialos E. Assessment of Overall Survival, Quality of Life, and Safety Benefits Associated With New Cancer Medicines. *JAMA Oncol*. 2016 Dec;116(14):3493–504.
465. Vogler S, Zimmermann N, Mazag J. Availability and procurement conditions of originator and generic medicines in hospitals—an exploratory study in five medium-sized European countries. *Generics Biosimilars Initiat J GaBI J*. 2014;3(4):168–79.

466. Kanavos P. Measuring performance in off-patent drug markets: a methodological framework and empirical evidence from twelve EU Member States. *Health Policy*. 2014;118(2):229–241.
467. Simoens S. Sustainable provision of generic medicines in Europe [Internet]. KU Leuven; 2013. Available from: <http://www.quotidianosanita.it/allegati/allegato3090824.pdf>
468. Wouters OJ, Kanavos PG, McKee M. Comparing generic drug markets in Europe and the US: prices, volumes, and spending. *Milbank Q* [Internet]. 2017; Available from: <http://eprints.lse.ac.uk/71641/>
469. Mossialos E, Naci H, Courtin E. Expanding the role of community pharmacists: policymaking in the absence of policy-relevant evidence? *Health Policy*. 2013;111(2):135–148.
470. Mossialos E, Courtin E, Naci H, Benrimoj S, Bouvy M, Farris K, et al. From “retailers” to health care providers: transforming the role of community pharmacists in chronic disease management. *Health Policy*. 2015;119(5):628–639.
471. PSNC. Who can prescribe what? [Internet]. PSNC Main site. [cited 2017 Jul 10]. Available from: <https://psnc.org.uk/dispensing-supply/receiving-a-prescription/who-can-prescribe-what/>
472. List of most commonly encountered drugs currently controlled under the misuse of drugs legislation - GOV.UK [Internet]. [cited 2017 Jul 10]. Available from: <https://www.gov.uk/government/publications/controlled-drugs-list--2/list-of-most-commonly-encountered-drugs-currently-controlled-under-the-misuse-of-drugs-legislation>
473. PHIS Hospital Pharma Report 2009: Austria [Internet]. 2009. Available from: http://whocc.goeg.at/Literaturliste/Dokumente/CountryInformationReports/PHIS_Hospital_Pharma_AT_Report_Final_version_090630.pdf
474. Björkhem-Bergman L, Andersén-Karlsson E, Laing R, Diogene E, Melien O, Jirlow M, et al. Interface management of pharmacotherapy. Joint hospital and primary care drug recommendations. *Eur J Clin Pharmacol*. 2013 May;69 Suppl 1:73–8.
475. Pleasant A, Kuruvilla S. A tale of two health literacies: public health and clinical approaches to health literacy. *Health Promot Int*. 2008 Jun;23(2):152–9.
476. World Health Organisation. Health Promotion [Internet]. WHO. Available from: <http://www.who.int/healthpromotion/conferences/7gchp/track2/en/>
477. Sørensen K, et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*. 2012;12(80).
478. Sørensen K, et al. Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *Eur J Public Health*. 2015 Dec;25(6):1053–1058.
479. HLS-EU CONSORTIUM. Comparative report of health literacy in eight EU member states. The European Health Literacy Survey HLS-EU. HLS-EU Consortium; 2012.
480. WHO. Health literacy - The solid facts. World Health Organisation; 2013.

481. OECD. Hospital discharge rates [Internet]. Organisation for Economic Development and Organisation. Available from: <https://data.oecd.org/healthcare/hospital-discharge-rates.htm>
482. Health Literacy Europe. National Health Literacy Initiatives [Internet]. Health Literacy Europe - a network for advancing European health literacy. Available from: <https://www.healthliteracyeurope.net/other-hl-networks>
483. Österreichische Plattform Gesundheitskompetenz. ÖPGK - Rahmen Gesundheitsziel 3 [Internet]. Available from: <https://oepgk.at>
484. Bundesministerium für Gesundheit. Empfehlungen Zur Einrichtung Der “Österreichischen Plattform Gesundheitskompetenz” (ÖPGK). Vienna: Bundesministerium für Gesundheit; 2014.
485. Dutch Health Literacy Alliance. Dutch Health Literacy Alliance [Internet]. Gezondheidsvaardigheden. Available from: <http://www.gezondheidsvaardigheden.nl/home/english/>
486. Kootphc. Health Literacy in the Netherlands [Internet]. Kootphc; Available from: https://www.kootphc.nl/English/areas-of-work/health_literacy_in_the.pdf
487. Netherlands institute for health services research (NIVEL). Evaluation of Dutch law and health care regulations [Internet]. Available from: <https://www.nivel.nl/en/evaluation-of-dutch-law-and-health-care-regulations>
488. NHS. Health Literacy [Internet]. Available from: <https://www.hee.nhs.uk/our-work/hospitals-primary-community-care/population-health-prevention/health-literacy>
489. Health Literacy Organisation. About Health Literacy [Internet]. Available from: <http://www.healthliteracy.org.uk>
490. NHS. About The Information Standard [Internet]. Available from: <https://www.england.nhs.uk/tis/about/the-info-standard/>
491. Royal College of Practitioners. Health Literacy- Report from an RCGP-led health literacy workshop. London: Royal College of Practitioners;
492. Baker D, Parker R, Williams MV, et al. The health care experience of patients with M. The health care experience of patients with low literacy. Arch Fam Med. 1996;5(6):329–34.
493. Bundesministerium für Gesundheit und Frauen, Arbeiterkammer Wien. Migration und Gesundheit [Internet]. 2015. Available from: http://www.goeg.at/cxdata/media/download/berichte/migration_und_gesundheit_2015.pdf
494. Hudelson P, Dao M, Perneger T, Durieux-Paillard S. A “Migrant Friendly Hospital” Initiative in Geneva, Switzerland: Evaluation of the Effects on Staff Knowledge and Practices. PLoS One. 2014;9(9):e106758.
495. Pharos. Pharos (Dutch Centre of Expertise on Health Disparities) [Internet]. Available from: <http://www.pharos.nl/information-in-english/about-us>

496. Ingleby D. State of the Art Report – The Netherlands. European Research Centre on Migration and Ethnic Relations (ERCOMER), Utrecht University;
497. Sindler KA. Kann die medizinische Vorsorgeuntersuchung durch verhaltensorientierte Angebote der Gesundheitsförderung ergänzt und verbessert werden? [Internet] [Thesis for Master of Public Health]. [Graz]: Medizinische Universität Graz; 2013. Available from: http://www.fgoe.org/projektfoerderung/gefoerderte-projekte/FgoeProject_2981/83152.pdf
498. World Health Organisation. Non-communicable diseases (NCDs) Country Profiles. Geneva: WHO; 2014.
499. Wu LA, Kanitz E, Crumly J, D’Ancona F, Strikas RA. Adult immunization policies in advanced economies: vaccination recommendations, financing, and vaccination coverage. *Int J Public Health*. 2013;58:865–874.
500. World Health Organization (WHO), United Nations Children’s Fund (UNICEF). Global Immunization vision and strategy, 2006–2015. Geneva: World Health Organization and United Nations Children’s Fund; 2005.
501. Levine O, Bloom D, Cherian T, de Quadros C, Sow S, Wecker J, et al. The future of immunisation policy, implementation, and financing. *Lancet*. 2011;378:439–448.
502. Asset Science Society. Compulsory vaccination and rates of coverage immunisation in Europe. Asset Science Society; 2015.
503. Der Spiegel. KITAS sollen Impfmuffel beim Gesundheitsamt melden. Spiegel Online. 2017.
504. BBC. Italy makes 12 vaccinations compulsory for children [Internet]. BBC News. 2017. Available from: <http://www.bbc.co.uk/news/world-europe-39983799>
505. The King’s Fund. A pro-active approach. Health Promotion and Ill-health Prevention. London: The King’s Fund; 2010.
506. OECD. Childhood vaccinations. Paris: Organisation for Economic Cooperation and Development; 2014.
507. International Pharmaceutical Federation (FIP). An overview of current pharmacy impact on immunisation A global report 2016. The Hague: International Pharmaceutical Federation;
508. Diabetes Fact Sheet [Internet]. World Health Organisation. 2016. Available from: <http://www.who.int/mediacentre/factsheets/fs312/en/>
509. BMG. Zivilisationskrankheit Diabetes: Ausprägungen, Lösungsansätze, Herausforderungen. Wien: Bundesministerium für Gesundheit; 2013.
510. OECD. Health at a glance. Paris: Organisation for Economic Cooperation and Development; 2016.

511. Schang L, Czypionka T, Thomson S. Strengthening care coordination: a comparative analysis of reform implementation in Austria and Germany, with options for Austria. London: The European Observatory on Health Systems and Policies; 2013.
512. Riedl R, Robausch M, Berghold A. The Evaluation of the Effectiveness of Austrians Disease Management Program in Patients with Type 2 Diabetes Mellitus - A Population-Based Retrospective Cohort Study. *PLoS ONE*. 2016;11(8):e0161429.
513. Ostermann H, Hoess V, Mueller M. Efficiency of the Austrian disease management program for diabetes mellitus type 2: a historic cohort study based on health insurance provider's routine data. *BMC Public Health*. 2012;12(490).
514. Jousilahti P, Laatikainen T, Peltonen M, Borodulin K, Männistö S, Jula A, et al. Primary prevention and risk factor reduction in coronary heart disease mortality among working aged men and women in eastern Finland over 40 years: population based observational study. *BMJ*. 2016;352(i721).
515. World Health Organisation. Cardiovascular Disease Fact Sheet. WHO. 2016.
516. AHA/WHF Scientific Statement. The Heart of 25 by 25: Achieving the Goal of Reducing Global and Regional Premature Deaths From Cardiovascular Diseases and Stroke A Modeling Study From the American Heart Association and World Heart Federation. The American Heart Association, Inc., and the World Heart Federation; 2016. Report No.: 133.
517. Griebler R, Anzenberger J, Eisenmann A. Herz-Kreislauf-Erkrankungen in Österreich: Angina Pectoris, Myokardinfarkt, ischämischer Schlaganfall, periphere arterielle Verschlusskrankheit. *Epidemiologie und Prävention*. Vienna: Federal Ministry of Health; 2014.
518. European Union Health Programme. Joint Action on Chronic Diseases and Promoting Health Ageing across the Life Cycle: JA-CHRODIS at a glance.
519. European Union Health Programme. Joint Action on Chronic Diseases & Promoting Health Ageing across the Life Cycle: Work Package 5 - Task 3. [Internet]. Available from: http://repositorio.insa.pt/bitstream/10400.18/4010/1/Dissemination_brochure_02_WEB.pdf
520. National Library of Medicine. MeSH Heading Case Management [Internet]. Medical Subject Headings (2017 MeSH). 2017 [cited 2017 Jun 1]. Available from: <https://meshb.nlm.nih.gov/record/ui?ui=D019090>
521. Commission for Case Manager Certification. Definition and Philosophy of Case Management [Internet]. [cited 2017 Jun 1]. Available from: <https://ccmcertification.org/about-us/about-case-management/definition-and-philosophy-case-management>
522. Case Management Society of America. What is a Case Manager? [Internet]. [cited 2016 Aug 25]. Available from: <http://www.cmsa.org/Home/CMSA/WhatisaCaseManager/tabid/224/Default.aspx>
523. Boulton C, Green AF, Boulton LB, Pacala JT, Snyder C, Leff B. Successful Models of Comprehensive Care for Older Adults with Chronic Conditions: Evidence for the Institute of Medicine's "Retooling for an Aging America" Report. *J Am Geriatr Soc*. 2009 Dec;57(12):2328–37.

524. EPOC. EPOC Taxonomy [Internet]. 2015 [cited 2016 Mar 12]. p. 1–11. Available from: <https://epoc.cochrane.org/epoc-taxonomy>
525. Engel GL. The Need for a New Medical Model: A Challenge for Biomedicine. *Science*. 1977;196(4286):129–36.
526. Wagner EH, Austin BT, Von Korff M, Korff M Von. Organizing care for patients with chronic illness. *Milbank Q*. 1996 Jan;74(4):511.
527. Wagner EH. Chronic Disease Management: What Will It Take To Improve Care for Chronic Illness? *Eff Clin Pract*. 1998 Jan;1(1):2–4.
528. Dieterich M, Irving CB, Park B, Marshall M. Intensive case management for severe mental illness. *Cochrane Database Syst Rev*. 2010 Jan;(10):CD007906.
529. Smith L, Newton R. Systematic review of case management. *Aust N Z J Psychiatry*. 2007 Jan;41(1):2–9.
530. Schwartz SR, Goldman HH, Churgin S. Case Management for the Chronic Mentally Ill: Models and Dimensions. *Psychiatr Serv*. 1982 Dec;33(12):1006–9.
531. Singh D, Ham C. Improving Care for People With Long-Term Conditions. Birmingham: University of Birmingham Health Services Management Centre & NHS Institute for Innovation and Improvement; 2006 Aug.
532. Tate DG. Workers' disability and return to work. *Am J Phys Med Rehabil*. 1992 Apr;71(2):92–6.
533. Goka RS. Case management. A rehabilitation physician's perspective. *J Insur Med N Y N*. 1991;23(4):252–5.
534. Anderson RE. Case management. A reinsurance perspective. *J Insur Med N Y N*. 1991;23(4):261–2.
535. OECD. Mental Health and Work: Denmark. Paris: OECD Publishing; 2013.
536. OECD. Mental Health and Work: Belgium. Paris: OECD Publishing; 2013.
537. James C, Devaux M, Sassi F. Inclusive Growth and Health. Paris; (OECD Health Working Papers). Report No.: XX.
538. NICE. Public Health Guidance [PH19]. Workplace health: long-term sickness absence and incapacity to work [Internet]. 2009 [cited 2016 Mar 29]. Available from: <https://www.nice.org.uk/guidance/ph19>
539. Ewers M, Schaeffer D. Case Management in Theorie und Praxis. Bern: Verlag Hans Huber; 2000.
540. Czypionka T, Kraus M, Röhrling G, Straka H. Case Management in Österreich und Europa. *Health Syst Watch*. 2008;(1/Frühjahr 2008):1–8.

541. European Agency for Safety and Health at Work. Fit2Work: Austria - Case Study [Internet]. Available from: file:///H:/1.%20Fit2Work%20-%20Austria.pdf
542. Boulton C, Wieland GD. Comprehensive Primary Care for Older Patients With Multiple Chronic Conditions. *JAMA*. 2010 Nov 3;304(17):1936.
543. de Bruin SR, Versnel N, Lemmens LC, Molema CCM, Schellevis FG, Nijpels G, et al. Comprehensive care programs for patients with multiple chronic conditions: A systematic literature review. *Health Policy*. 2012 Oct;107(2–3):108–45.
544. Hopman P, de Bruin SR, Forjaz MJ, Rodriguez-Blazquez C, Tonnara G, Lemmens LC, et al. Effectiveness of comprehensive care programs for patients with multiple chronic conditions or frailty: A systematic literature review. *Health Policy*. 2016 Jul;120(7):818–32.
545. Smith SM, Wallace E, O’Dowd T, Fortin M. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. In: Smith SM, editor. *Cochrane Database of Systematic Reviews*. Chichester, UK: John Wiley & Sons, Ltd; 2016.
546. Tully PJ, Baumeister H. Collaborative care for comorbid depression and coronary heart disease: a systematic review and meta-analysis of randomised controlled trials. *BMJ Open*. 2015 Dec 21;5(12):e009128.
547. Watson LC, Amick HR, Gaynes BN, Brownley KA, Thaker S, Viswanathan M, et al. Practice-Based Interventions Addressing Concomitant Depression and Chronic Medical Conditions in the Primary Care Setting: A Systematic Review and Meta-Analysis. *J Prim Care Community Health*. 2013 Oct 1;4(4):294–306.
548. Atlantis E, Fahey P, Foster J. Collaborative care for comorbid depression and diabetes: a systematic review and meta-analysis. Vol. 4, *BMJ Open*. E. Atlantis, School of Nursing and Midwifery, University of Western Sydney, Campbelltown Campus, Campbelltown, NSW, Australia. E-mail: e.atlantis@uws.edu.au; BMJ Publishing Group; 2014. p. e004706.
549. Hallberg IR, Kristensson J, IR H, Kristensson J. Preventive home care of frail older people: a review of recent case management studies. *J Clin Nurs*. 2004 Sep 2;13(6B):112–20.
550. Johri M, Beland F, Bergman H. International experiments in integrated care for the elderly: a synthesis of the evidence. *Int J Geriatr Psychiatry*. 2003 Mar;18(3):222–35.
551. Dy SM, Apostol C, Martinez KA, Aslakson RA. Continuity, coordination, and transitions of care for patients with serious and advanced illness: a systematic review of interventions. *J Palliat Med*. 2013 Apr;16(4):436–45.
552. Gomes B, Calanzani N, Curiale V, McCrone P, IJ H. Effectiveness and cost-effectiveness of home palliative care services for adults with advanced illness and their caregivers. *Cochrane Database Syst Rev*. 2013 Jun;(6):N.PAG-N.PAG 1p.
553. Lockett T, Phillips J, Agar M, Virdun C, Green A, Davidson PM. Elements of effective palliative care models: a rapid review. *BMC Health Serv Res*. 2014 Jan;14:136.

554. Rabow M, Kvale E, Barbour L, Cassel JB, Cohen S, Jackson V, et al. Moving upstream: a review of the evidence of the impact of outpatient palliative care. *J Palliat Med.* 2013 Dec;16(12):1540–9.
555. DiMartino LD, Weiner BJ, Mayer DK, Jackson GL, Biddle AK. Do Palliative Care Interventions Reduce Emergency Department Visits among Patients with Cancer at the End of Life? A Systematic Review. *J Palliat Med.* 2014 Dec;17(12):1384–99.
556. Althaus F, Paroz S, Hugli O, Ghali WA, Daepfen JB, Peytremann-Bridevaux I, et al. Effectiveness of interventions targeting frequent users of emergency departments: a systematic review. Vol. 58, *Annals of Emergency Medicine.* 2011. p. 41–52.
557. Tricco AC, Antony J, Ivers NM, Ashoor HM, Khan PA, Blondal E, et al. Effectiveness of quality improvement strategies for coordination of care to reduce use of health care services: a systematic review and meta-analysis. *CMAJ Can Med Assoc J J Assoc Medicale Can.* 2014 Oct;186(15):E568–78.
558. Chiu WK, Newcomer R. A Systematic Review of Nurse-Assisted Case Management to Improve Hospital Discharge Transition Outcomes for the Elderly. *Prof Case Manag.* 2007 Nov;12(6):330–6.
559. Hallberg IR, Kristensson J, IR H, Kristensson J. Preventive home care of frail older people: a review of recent case management studies. *J Clin Nurs.* 2004 Sep 2;13(6B):112–20.
560. Hoefsmit N, Houkes I, Nijhuis FJN. Intervention characteristics that facilitate return to work after sickness absence: A systematic literature review. *J Occup Rehabil.* 2012;22(4):462–77.
561. Schandelmaier S, Ebrahim S, Burkhardt SCA, de Boer WEL, Zumbunn T, Guyatt GH, et al. Return to Work Coordination Programmes for Work Disability: A Meta-Analysis of Randomised Controlled Trials. *PLoS ONE.* 2012;7(11).
562. Palmer KT, Harris EC, Linaker C, Barker M, Lawrence W, Cooper C, et al. Effectiveness of community- and workplace-based interventions to manage musculoskeletal-related sickness absence and job loss: A systematic review. *Rheumatology.* 2012;51(2):230–42.
563. Franche RL, Cullen K, Clarke J, Irvin E, Sinclair S, Frank J, et al. Workplace-based return-to-work interventions: A systematic review of the quantitative literature. *J Occup Rehabil.* 2005;15(4):607–31.
564. Carroll C, Rick J, Pilgrim H, Cameron J, Hillage J. Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of the effectiveness and cost-effectiveness of interventions. *Disabil Rehabil.* 2010;32(8):607–21.
565. Kuoppala J, Lamminpää A. Rehabilitation and work ability: A systematic literature review. *J Rehabil Med.* 2008;40(10):796–804.
566. Gabbay M, Taylor L, Sheppard L, Hillage J, Bamba C, Ford F, et al. NICE guidance on long-term sickness and incapacity. *Br J Gen Pract.* 2011;61(584):118–24.
567. Carroll C, Rick J, Pilgrim H, Cameron J, Hillage J. Workplace involvement improves return to work rates among employees with back pain on long-term sick leave: a systematic review of the effectiveness and cost-effectiveness of interventions. *Disabil Rehabil.* 2010 Jan 6;32(8):607–21.

568. OECD. *Fit Mind, Fit Job*. Paris: OECD Publishing; 2015. (Mental Health and Work).
569. Nielsen MBD, Vinslov Hansen J, Aust B, Tverborgvik T, Thomsen BL, Bue Bjorner J, et al. A multisite randomized controlled trial on time to self-support among sickness absence beneficiaries. The Danish national return-to-work programme. *Eur J Public Health*. 2015 Feb 1;25(1):96–102.
570. Danish Government. *The National Reform Programme*. Copenhagen; 2015.
571. Koopmans PC, Roelen CAM, Groothoff JW. Frequent and long-term absence as a risk factor for work disability and job termination among employees in the private sector. *Occup Environ Med*. 2008 Jul 1;65(7):494–9.
572. OECD. *Sickness, Disability and Work: Breaking the Barriers*. Paris: OECD Publishing; 2010.
573. OECD. *Mental Health and Work: Netherlands*. Paris: OECD Publishing; 2014. (Mental Health and Work).
574. OECD. *Health Status: Absence from work due to illness*. 2016.
575. Burdorf A. *Fit for Work' evaluation study: the effects of a multidisciplinary re-employment programme for persons with mental health problems* [Internet]. Netherlands Trial Register. 2013 [cited 2017 May 30]. Available from: <http://www.trialregister.nl/trialreg/admin/rctview.asp?TC=3920>
576. Vermeulen SJ, Anema JR, Schellart AJM, Knol DL, van Mechelen W, van der Beek AJ. A Participatory Return-to-Work Intervention for Temporary Agency Workers and Unemployed Workers Sick-Listed Due to Musculoskeletal Disorders: Results of a Randomized Controlled Trial. *J Occup Rehabil*. 2011 Sep 19;21(3):313–24.
577. OECD. *Mental Health and Work: United Kingdom*. Paris: OECD Publishing; 2014. (Mental Health and Work).
578. Chenery V. *An evaluation of the Statement of Fitness for Work (fit note): a survey of employees*. London; 2013.
579. Shiels C, Hillage J, Pollard E, Gabbay M. *Evaluation of the Statement of Fitness for Work (fit note): quantitative survey of fit notes*. London; 2013.
580. Demou E, Brown J, Sanati K, Kennedy M, Murray K, Macdonald EB. A novel approach to early sickness absence management: The EASY (Early Access to Support for You) way. *Work*. 2016 Mar 14;53(3):597–608.
581. Smedley J, Harris EC, Cox V, Ntani G, Coggon D. Evaluation of a case management service to reduce sickness absence. *Occup Med Oxf Engl*. 2013 Mar 1;63(2):89–95.
582. Hillage J, Williams M, Marvell R, Shiels C, Gabbay M, Weston K, et al. *Evaluation of the 2010–13 Fit for Work Service pilots: final report*. London; 2015.

583. The Commonwealth Fund International Experts Working Group on Patients with Complex Conditions. Designing a High-Performing Health Care System for Patients with Complex Needs: Ten Recommendations for Policymakers. New York City, NY; 2017.
584. Barbabella F, Hujala A, Quattrini S, Melchiorre MG. The Strategy for Chronic Care in Valencia Region (Estrategia para la atención a pacientes crónicos en la Comunitat Valenciana). 2015.
585. Gallud J, Soler P, Cuevas D. Nuevos perfiles enfermería para el manejo integral de pacientes crónicos complejos y paliativos en la Comunidad Valenciana. *Int J Integr Care*. 2012;12(May):1–6.
586. Nolte E, Knai C, McKee M, editors. Managing chronic conditions : experience in 8 countries. Observatory Study Series. Copenhagen: WHO Regional Office for Europe; 2008.
587. Amelung VE, Eble S, Hildebrandt H, Knieps F, Lägél R, Ozegowski S, et al. Innovationsfonds: Impulse für das deutsche Gesundheitssystem. Berlin: MWV Medizinisch Wissenschaftliche Verlagsgesellschaft; 2017.
588. Nolte E, Knai C, Hofmarcher M, Conklin A, Erler A, Elissen A, et al. Overcoming fragmentation in health care: chronic care in Austria, Germany and The Netherlands. *Health Econ Policy Law*. 2012 Jan;7(1):125–46.
589. Mossialos E, Wenzl M, Osborn R, Sarnak D, editors. International Profiles of Health Care Systems 2015. New York City, NY: The Commonwealth Fund; 2016.
590. Eaton W. Mortality gap between people with schizophrenia or bipolar disorder and the general population persists in England. *Evid Based Ment Health*. 2012 Feb;15(1):14–14 1p.
591. Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. *Lancet*. 2007;370(9590):851–8.
592. Parks J, Svendsen D, Singer P, Foti ME. Morbidity and Mortality in People with Serious Mental Illness Table of Contents. October. Alexandria, VA, USA; 2006.
593. Stein MB, Cox BJ, Afifi TO, Belik S-L, Sareen J. Does co-morbid depressive illness magnify the impact of chronic physical illness? A population-based perspective. *Psychol Med*. 2006 May 28;36(05):587.
594. WHO. Mental Health: Facing the Challenges, building solutions. Copenhagen; 2005.
595. Berwick DM, Hackbarth AD. Eliminating Waste in US Health Care. *JAMA*. 2012 Apr 11;307(14):1513–6.
596. Richard S, Ana R, Wienke B. Social Health Insurance Systems In Western Europe. McGraw-Hill Education (UK); 2004. 327 p.
597. OECD. Tackling Wasteful Spending on Health [Internet]. Paris; 2017. Available from: <http://dx.doi.org/10.1787/9789264266414-en>
598. OECD. A System of Health Accounts 2011 Edition. OECD Publishing; 2011.

599. OECD. Guidelines to improve estimates of expenditure on health administration and health insurance [Internet]. 2013 Dec. Available from: <https://www.oecd.org/els/health-systems/Improving-Estimates-of-Spending-on-Administration.pdf>
600. Czypionka T, Riedel M, Röhrling G. Verwaltung im Gesundheitssystem: Bestandsaufnahme und Einsparungspotenziale in Österreich, Reformen im Vereinigten Königreich. 2010 [cited 2017 Apr 20]; Available from: <http://irihs.ihs.ac.at/id/eprint/3153>
601. Mossialos E, Dixon A, Figueras J, Kutzin J. Funding health care: options for Europe [Internet]. Open University Press Buckingham; 2002 [cited 2017 Apr 20]. Available from: https://www.researchgate.net/profile/Anna_Dixon/publication/30527296_Funding_Health_Care_Options_for_Europe/links/00b49518574a64498f000000.pdf
602. Hussey P, Anderson GF. A comparison of single-and multi-payer health insurance systems and options for reform. *Health Policy*. 2003;66(3):215–228.
603. Czypionka T, Riedel M, Röhrling G, Lappöhn S, Six E. Zukunft der Sozialen Krankenversicherung Entwicklungsmöglichkeiten für Österreich. Institut für Höhere Studien (IHS), Wien; 2017 Jänner.
604. Wieser S, Schleiniger R, Pletscher M, Plessow R, Brügger R. Kantonale oder regionale Krankenkasse (KRK): Ökonomische Beurteilung der Vor- und Nachteile. Winterthurer Institut für Gesundheitsökonomie. n.d.
605. Hulze DG. What is fraud? [Internet]. EHFCN. [cited 2017 Jan 24]. Available from: <http://www.ehfcn.org/what-is-fraud/>
606. Vian T. Review of corruption in the health sector: theory, methods and interventions. *Health Policy Plan*. 2008;23(2):83–94.
607. Transparency International. Corruption in the pharmaceutical sector: Diagnosing the challenges [Internet]. 2016 Jun. Available from: <file:///H:/Corruption-in-the-Pharmaceutical-Sector.pdf>
608. Czypionka T, Kraus M, Riedel M, Röhrling G. Warten auf Elektivoperationen in Österreich: eine Frage der Transparenz. 2007 [cited 2017 Mar 6]; Available from: <http://irihs.ihs.ac.at/id/eprint/3164>
609. Petkov M, Cohen DD. Diagnosing corruption in healthcare. Transparency International; 2016.
610. Accenture. Fraud, waste and abuse in social services: Identifying and overcoming this modern-day epidemic. 2013.
611. European Commission. Special Eurobarometer 397: Corruption Report [Internet]. 2014 Feb. Available from: http://ec.europa.eu/public_opinion/archives/ebs/ebs_397_en.pdf
612. Crowe Clark Whitehill. The Financial Cost of Fraud 2017. 2017.
613. PUBLIC LAW 107–300—NOV. 26, 2002. 116 STAT. 2350 [Internet]. 2002. Available from: <https://www.gpo.gov/fdsys/pkg/PLAW-107publ300/pdf/PLAW-107publ300.pdf>

614. Countering Healthcare Fraud and Corruption in Europe: The European Healthcare Fraud and Corruption Declaration. In 2004. Available from: <file:///H:/i005656.pdf>
615. OECD. Tackling wasteful spending on health [Internet]. Paris: OECD Publishing; 2017. Available from: <http://www.quotidianosanita.it/allegati/allegato3684537.pdf#page=231>
616. Gee J, Button M. The financial cost of healthcare fraud 2015: What data from around the world shows [Internet]. PKF LittleJohn LLP; 2015. Available from: <http://www.port.ac.uk/media/contacts-and-departments/icjs/ccfs/The-Financial-Cost-of-Healthcare-Fraud-Report-2015.pdf>
617. Gee J, Button M. The financial cost of healthcare fraud 2015: what data from around the world shows [Internet]. PKF Littlejohn; 2015 [cited 2017 Jan 17]. Available from: <http://eprints.port.ac.uk/18411/>
618. Sauter W, Mikkers M, Vincke P, Boertjens J. Healthcare fraud, corruption and waste in Europe: National and academic perspectives. 2017; Available from: <https://www.narcis.nl/publication/RecordID/oai:tilburguniversity.edu:publications%2F662504cc-245a-4eae-a3c8-e4ff7bd29ad4>
619. Transparency International Italia, RISSC. Corruption and waste in the health system [Internet]. 2013 Nov. Available from: https://www.transparency.it/wp-content/uploads/2013/11/21x21_SprechiSanit%C3%A0_ENG.pdf
620. Bade T. Fraud Prevention in Germany: Why is Government still amending the Wording of Law? [Internet]. 2011 Sep. Available from: http://www2.mz.gov.pl/wwwfiles/ma_struktura/docs/zal_7_tb_19102011.pdf
621. NHS England. NHS England Annual Report 2015/16 [Internet]. 2016. Available from: <https://www.england.nhs.uk/wp-content/uploads/2016/07/nhse-annual-rep-201516.pdf>
622. NHS Protect. Annual Report 2015-16 [Internet]. 2016 Jul. Available from: http://www.nhsbsa.nhs.uk/Documents/CounterFraud/Annual_Report2015-16.pdf
623. Gaitonde R, Oxman AD, Okebukola PO, Rada G. Interventions to reduce corruption in the health sector. In: Cochrane Database of Systematic Reviews [Internet]. John Wiley & Sons, Ltd; 2016 [cited 2017 Jan 17]. Available from: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD008856.pub2/abstract>
624. Health AGD of. Compliance and fraud [Internet]. Australian Government Department of Health; [cited 2017 Mar 9]. Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/fraud>
625. Health AGD of. Health provider related tip-offs [Internet]. Australian Government Department of Health; [cited 2017 Mar 9]. Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/fraud-tip-offs>
626. Australian Government. Department of Health Annual Report 2015-16 [Internet]. Canberra, Australia; 2016. Available from: [http://www.health.gov.au/internet/main/publishing.nsf/Content/annual-report2015-16-cnt1/\\$File/department-of-health-annual-report-2015-16.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/annual-report2015-16-cnt1/$File/department-of-health-annual-report-2015-16.pdf)

627. NIHDI. Medical Evaluation and Inspection Department [Internet]. n.d. Available from: <http://www.coopami.org/en/coopami/realisation/2014/pdf/2014031106.pdf>
628. NHS Protect About us NHS Business Services Authority [Internet]. [cited 2017 Mar 8]. Available from: <http://www.nhsbsa.nhs.uk/3349.aspx>
629. NHS_Protect_Strategy.pdf [Internet]. [cited 2017 Mar 8]. Available from: http://www.nhsbsa.nhs.uk/Documents/CounterFraud/NHS_Protect_Strategy.pdf
630. NHS Protect Fraud Corruption Reporting [Internet]. [cited 2017 Mar 8]. Available from: <https://www.reportnhsfraud.nhs.uk/>
631. NHS England. Tackling Fraud, Bribery & Corruption: Policy & Corporate Procedures [Internet]. 2016 Oct. Available from: <https://www.england.nhs.uk/wp-content/uploads/2013/11/frd-brib-corr-pol.pdf>
632. Meissnitzer M. "Fraud and Error" in der Sozialversicherung. Betrugsbekämpfung und soziale Sicherheit. Rechtspanorama SV. 2015;(3):108–20.
633. Schaffer T. Missbrauch von e-Cards: Kaum Fälle und Kosten [Internet]. Kurrier Österreich. 2017. Available from: <https://kurier.at/politik/inland/missbrauch-von-e-cards-kaum-faelle-und-kosten/272.428.577>

Appendix A: Concept note

Einleitung

Zentrales Ziel für die Bundesregierung ist der effiziente Einsatz von Ressourcen bei gleichzeitiger Harmonisierung des Leistungsstandards und Ausbau der Services für die Versicherten.¹¹⁵ Zur Verbesserung der Effizienz und der für die Menschen zur Verfügung stehenden Leistungen sollen in dieser Studie grundlegende Fragestellungen der Sozialversicherung und der damit verwandten Themenbereiche analysiert werden.

Dies umfasst auch in Zukunft eine flächendeckende und wohnortnahe Versorgung mit Gesundheitsleistungen, die unabhängig von Alter, Einkommen, Geschlecht, Herkunft, Religion und Gesundheitszustand in bestmöglicher Qualität sicherzustellen sind. Damit soll das Erfolgsmodell der österreichischen Sozialversicherung auch für die Zukunft abgesichert werden, wobei im Bereich des Gesundheitswesens die PatientInnen im Mittelpunkt stehen. Zu prüfen ist in diesem Zusammenhang, ob und in welchem Umfang eine Reform des Sozialversicherungssystems zur Verbesserung der Versorgungssicherheit und -qualität im Gesundheitswesen, bzw. zu einer Steigerung der Effizienz und Effektivität beitragen kann. Eine erfolgreiche Weiterentwicklung des derzeitigen Systems ist jedoch aufgrund der hohen Gesamtsystemkomplexität des Gesundheitswesens nur in Verbindung mit einem verbesserten Zusammenspiel der unterschiedlichen Akteure möglich. Eine Modernisierung und eine Steigerung der Transparenz sollte in Verbindung mit einer nachhaltigen Sicherstellung der Finanzierung, des hohen Niveaus der medizinischen Versorgung und der Leistungen der sozialen Sicherheit erreicht werden. Nachfolgende Fragestellungen sind in diesem Zusammenhang unter anderem zu prüfen:

- Effiziente und effektive Nutzung der eingesetzten Finanzmittel durch die Sozialversicherung in Verwaltung und im Leistungsbereich
- Prüfung der Reduzierung der Trägerlandschaft
- Leistungsharmonisierung auf ein einheitliches Niveau
- Vereinfachung der Beitragseinhebung (unter anderem durch Streichung von Spezialbestimmungen)
- Vereinfachung der Abwicklung von Mehrfachversicherungen
- Stärkung der Prävention und Gesundheitskompetenz
- Einführung eines flächendeckenden Case Managements
- Modernisierung des Vertragspartnerrechts und der Tarifkataloge mit den Gesundheitsdiensteanbietern

¹¹⁵ Unter Versicherten werden Voll- bzw. Teilversicherte nach den Sozialversicherungsgesetzen, wie auch sonstige Versorgte verstanden

Klar ist, dass Fragen der Organisation und der Finanzierung ein Ziel haben müssen: Die Sozialversicherung ist zukunftsfit zu machen – in diesem Zusammenhang muss auch die Finanzierung für die kommenden Generationen sichergestellt werden.

UMFASSENDE VERSORGUNG FÜR DIE MENSCHEN: Mehr Leistungen und weniger Bürokratie

Die nachhaltige Absicherung des öffentlichen Gesundheitssystems, der Ausbau der Sachleistungsversorgung am Letztstand der Wissenschaft, sowie die Stärkung der Gesundheitsförderung sind zentrale Eckpunkte des gesundheitspolitischen Handelns. Zudem ist das System der solidarischen Krankenversicherung nachhaltig abzusichern und allen Menschen ein solidarischer Zugang zu umfassender, qualitativ hochstehender Gesundheitsversorgung zu ermöglichen. Diese Grundsätze sind den Überlegungen zu Effizienzverbesserungen im Gesundheitswesen zu Grunde zu legen.

Staatsziel „Soziale Absicherung“

Die Republik Österreich steht für ein **solidarisches System der sozialen Sicherheit, ausgehend von dem Prinzip der Pflichtversicherung**. Die Menschen können darauf vertrauen, dass die hochwertige Versorgung durch die Sozialversicherung für sie, ihre Kinder und Enkel nachhaltig gesichert bleibt. Die Selbstverwaltung als Governance-Instrument, bestehend aus VertreterInnen der ArbeitnehmerInnen und der ArbeitgeberInnen, schafft Stabilität und langfristige Planbarkeit. Daher ist die Selbstverwaltung einer der Erfolgsfaktoren für die nachhaltige soziale Absicherung der Menschen in Österreich.

Die vorangestellten Grundsätze sollen, um die Weiterentwicklung der Systeme zu fokussieren, durch ein Staatsziel gestützt werden. Die Idee der Staatsziele verfolgt eine grundsätzliche strategische Ausrichtung des österreichischen Gemeinwesens. **Staatsziele** sind als über die Legislaturperioden hinausgehende **Handlungsanleitungen** des **Gesamtstaates** zu sehen. Staatsziele definieren Querschnittsmaterien, die von allen Politikfeldern im Rahmen der jeweiligen Zuständigkeiten bearbeitet werden müssen.

Im Rahmen dieser Untersuchung soll eine Formulierung für ein soziales **Staatsziel „nachhaltige soziale Absicherung für die in Österreich lebenden Menschen“** gefunden werden. Dabei soll einerseits auf die besonderen Merkmale der bestehenden sozialen Sicherungssysteme abgestellt, andererseits internationale Best-Practice Beispiele als Vorbilder herangezogen werden. Die Grundsätze der Selbstverwaltung und der öffentlichen sozialen Sicherungssysteme sollen abgesichert werden. Das Prinzip der Pflichtversicherung, das garantiert, dass alle Menschen, unabhängig von der individuellen ökonomischen Stärke, einen gleichen gesetzlichen Leistungsanspruch haben, soll auch in Zukunft unverändert fortbestehen.

☒ **Aufgabenstellung:** Entwicklung einer Formulierung für ein soziales Staatsziel „nachhaltige soziale Absicherung für die in Österreich lebenden Menschen“.

Leistungsrecht harmonisieren

Das Leistungsrecht ist für die Versichertengemeinschaft von zentraler Bedeutung. Unterschiede werden von den versicherten Menschen im Alltag wahrgenommen, stoßen auf Unverständnis und führen zu Systemkritik. In einem Versicherungssystem mit einer gesetzlichen Zuordnung der Versicherten zu den einzelnen Sozialversicherungsträgern hat die Harmonisierung des Leistungsrechts oberste Priorität. Dabei ist als Basis zu erheben, in welchem Ausmaß Leistungen derzeit schon über die verschiedenen Träger harmonisiert sind. Das betrifft sowohl die rechtliche Ausgestaltung als auch den Zugang zu den Leistungen und die konkreten Leistungen selbst. In Hinblick auf die bereits bestehende Leistungskonvergenz ist ein internationaler Vergleich anzustellen.

Es gilt folgende Arten der Leistungsdifferenzierung zu prüfen:

- gesetzliche Leistungsdifferenzierung
- satzungsmäßige Leistungsdifferenzierung
- tatsächliche Leistungsdifferenzierung
- vertragspolitische Leistungsdifferenzierung

Ziel der Harmonisierung des Leistungsrechts muss es sein, allen Versicherten gleiche und umfassende Leistungen – *state of the art* – anzubieten. Dabei ist eine Verbesserung des Leistungsangebots anzustreben – ein *race to the bottom* wird abgelehnt. Ziel ist es, die Leistungen, unabhängig von der Kasse, der ein Versicherter zugeordnet ist, auf ein einheitliches Niveau zu bringen. Das betrifft insbesondere die gesetzlichen Krankenversicherungsträger, wie auch die Versorgungssysteme von Bundes- und Landesbediensteten und die Betriebskrankenkassen. Der Bereich der Rehabilitation ist miteinzubeziehen. Zudem soll eine nachhaltige Klärung der Leistungszuständigkeit im Bereich **Kur und Rehabilitation** erfolgen. Die Leistungen sollen über alle Versicherungen betrachtet steigen. Die Verhältnismäßigkeit und Finanzierbarkeit ist bei der Entwicklung der Leistungsharmonisierung im Auge zu behalten, wobei klar ist, dass die Harmonisierung der Leistungen eine Verbesserung für die Bevölkerung bringen soll. Als eines der Hauptelemente bei der Harmonisierung des Leistungsrechts soll der **Fokus auf den Ausbau der Sachleistungen** gerichtet werden. Der Mittelbedarf ist zu beziffern und in einem Stufenplan zur Implementierung dazustellen. Im Rahmen eines vorzulegenden **Umsetzungsprozesses (Umsetzungspakete)** wird darauf Rücksicht zu nehmen sein, inwieweit verfassungsrechtliche Gesichtspunkte, wie „Vertrauensschutz“, in eine Modellierung der Übergangbestimmungen einzufließen hätten.

Aufgabenstellung: Analyse, bis zu welchem Grad Leistungen bereits jetzt harmonisiert sind. Dabei ist auf die rechtliche Ausgestaltung als auch den Zugang zu den Leistungen und die konkreten Leistungen selbst abzustellen. Ein internationaler Vergleich ist zu ziehen.

Aufgabenstellung: Erarbeitung von Vorschlägen zur Leistungsharmonisierung zwischen allen Versichertengruppen. Dabei soll eine Leistungsharmonisierung, bei der im Ergebnis das Leistungsniveau für alle Versicherten in Summe auf ein relativ höheres Niveau gehoben wird, erreicht werden. Dabei soll ein Fokus auf Sachleistungen gelegt werden. Die Grundsätze der Verhältnismäßigkeit und Finanzierbarkeit sind zu berücksichtigen.

Aufgabenstellung: Zur Umsetzung soll – auch unter Bedachtnahme auf die Finanzierung – ein Vorschlag für die Implementierung der Umsetzungspakete in einem Stufenplan erarbeitet werden.

Aufgabenstellung: Analyse der Leistungszuständigkeit für Kur und Rehabilitation unter Effizienz- und Qualitätsgesichtspunkten.

Prävention und Gesundheitsförderung

Österreich hat ein ausgezeichnetes kuratives Gesundheitssystem. Die Prävention und Gesundheitsförderung ist in Zukunft strategisch – auf der Grundlage der Gesundheitsreform 2013, entlang der Rahmengesundheitsziele – zu stärken. Es ist zu erheben, wie Investitionen in diesen Felder ausgestaltet sein müssen, um gute Ergebnisse erzielen zu können.

Aufgabenstellung: Erarbeitung von konkreten Maßnahmen zur Stärkung von Prävention und Gesundheitsförderung für die Versicherten, aufbauend auf der Gesundheitsreform 2013, den Rahmengesundheitszielen und der Gesundheitsförderungsstrategie. Dabei ist auch auf Fragen der Gesundheitskompetenz (*health literacy*) einzugehen.

Case Management

Ein aktivierender Sozialstaat nutzt die Instrumente des Case- und Care Managements zur Stützung der Krankheitsbewältigung und zur Stärkung der Gesundheitschancen. Bestehende Instrumente wie *fit to work*, Case Management im Rahmen des Rehabilitations-Geldes und die betriebliche Gesundheitsförderung sollen systemisch ineinandergreifen. Dadurch sollen Frühpensionierungen vermieden werden. Dabei sind auch die Grenzen des Case Managements aufzuzeigen.

☐ **Aufgabenstellung:** Welche internationalen Erkenntnisse im Bereich des Case- und Care Managements sind für Österreich anwendbar und umsetzbar?

Beitragseinhebung

In den letzten Jahren wurden viele Sonderbestimmungen im Bereich der Beitragseinhebung geschaffen. Für BeitragszahlerInnen führen diese Bestimmungen im Alltag zu einer hohen Verwaltungskomplexität. Diese Komplexität ist durch die Streichung von Spezialbestimmungen zu reduzieren. Dazu ist die Beitragsgrundlagenbildung zu analysieren.

Aufgabenstellung: Vorlage eines Konzepts zur Vereinfachung der Beitragseinhebung durch Streichung von Spezialbestimmungen.

Aufgabenstellung: Analyse der Beitragsgrundlagenbildung unter dem Aspekt der Beitragsgerechtigkeit.

Bürokratieabbau für Mehrfachversicherte

Eine der Grundsäulen der Pflichtversicherung ist, dass für jede Art von Erwerbseinkommen Versicherungsbeiträge zu entrichten sind. An diesem Grundsatz soll festgehalten werden. In der Praxis ist die Abwicklung der Mehrfachversicherung für BeitragszahlerInnen über der Höchstbeitragsgrundlage mit nicht notwendigem Verwaltungsaufwand verbunden. In diesen Fällen gilt es daher, Entbürokratisierungsmaßnahmen zu setzen.

Aufgabenstellung: Erarbeitung von Endbürokratisierungsmaßnahmen für Mehrfachversicherte im Beitragsbereich – etwa die amtswegige Rückerstattung von geleisteten Sozialversicherungsbeiträgen über der Höchstbeitragsgrundlage.

NORMATIVE GRUNDLAGEN: Analyse des Ist-Stands

Verfassungsfragen

Kompetenzverteilung des Bundesverfassungsgesetzes

Basis der Überlegungen ist die **zwischen Bund und Ländern** bestehende **Kompetenzlage** des Bundesverfassungsgesetzes (B-VG), insbesondere im Gesundheitswesen: Die Zuständigkeit der Sozialversicherung betrifft den extramuralen Bereich, verbunden mit einem großen Anteil der Krankenanstalten-Finanzierung. Dem gegenüber steht der Versorgungsauftrag der Länder für die Krankenanstalten. Sozialversicherungsrecht ist verfassungsgesetzlich Bundessache in Gesetzgebung und Vollziehung (Art 10 B-VG). Im Bereich der Krankenanstalten liegt die Grundsatz-Gesetzgebung beim Bund, die Ausführungs-Gesetze, sowie die Vollziehung sind Landessache (Art 12 B-VG). Das bedeutet, dass die Kompetenzlage mehrfach asymmetrisch verteilt ist. Demgegenüber sind die Krankenfürsorgeanstalten der Länder dienstherrliche Einrichtungen von Gebietskörperschaften (Art. 21 B-VG).

Das **Prinzip** der **Selbstverwaltung** ist in der Bundesverfassung verankert. Von diesem Prinzip als funktionierende Grundlage der Sozialversicherung auf der einen Seite und den Ärztekammern, der Apothekerkammer, der Wirtschaftskammern, der Zahnärztekammern und weiterer Leistungsanbieter auf der anderen Seite ist auszugehen.

Organisationsstruktur-Änderungen durch Verfassungs- oder einfachen Bundesgesetzgeber?

Als Basis der juristischen Analyse sind vor allem die verfassungsrechtlichen Fragestellungen einer Prüfung zu unterziehen. Es ist aus rechtlicher Sicht zu klären, ob die bestehende Trägerlandschaft einfachgesetzlich oder nur mit **Verfassungsmehrheit** einer **Strukturanpassung** unterworfen werden kann.

Aufgabenstellung: Gibt es eine verfassungsgesetzlich verankerte Bestandsgarantie für die nach Berufsgruppen und/oder regional und/oder bundesweit organisierten Kranken-, Unfall- und Pensionsversicherungsträger und die Krankenfürsorgeanstalten?

Aufgabenstellung: Gebietet die Bundesverfassung die Bildung von unterschiedlichen Versichertengemeinschaften (Unselbstständige, Selbstständige) oder ist dem Gesetzgeber die Strukturgestaltung der Selbstverwaltung frei überlassen?

Kompetenzbereinigung in der Gesetzgebung im Bereich der Krankenanstalten Gesundheitsversorgung ist nicht auf die Sozialversicherungen zu beschränken, sondern wird zu einem großen Teil auch in den Krankenanstalten geleistet. Daher ist auch die verfassungsrechtliche Kompetenzverteilung in diesem Bereich zu betrachten. Die **Kompetenzverteilung im Krankenanstaltenbereich** ist historisch gewachsen und komplex. Derzeit ist die Grundsatzgesetzgebung Bundessache und die Ausführungsgesetzgebung obliegt den Ländern. Dies führt im Detail zu unterschiedlichen Regelungen in den neun Bundesländern. Daher ist zu prüfen, ob es weiterhin zehn Krankenanstaltengesetze geben soll, oder ob es sowohl ökonomisch, als auch staatsrechtlich effektiver wäre, die Gesetzgebung (nicht aber die Verwaltung) beim Bund zu bündeln. Neben der juristischen Analyse ist auch eine ökonomische Bewertung einer Änderung der Kompetenzverteilung zu erstellen und das Ergebnis der Beibehaltung des Status-Quo gegenüberzustellen.

Aufgabenstellung: Prüfung der verfassungsrechtlichen Möglichkeiten einer Kompetenzverschiebung im Bereich des Krankenanstaltenrechts.

Aufgabenstellung: Ökonomische Analyse der Effizienzpotentiale einer geänderten Kompetenzverteilung.

Vertragspartnerrecht modernisieren

Das bestehende Vertragspartnerrecht geht auf die 1950er Jahre zurück. Es determiniert die für die PatientInnen relevanten Leistungen der Gesundheitsversorgung und hat daher einen besonderen Stellenwert. Die Verbesserungen der Leistungen durch eine österreichweite Leistungsharmonisierung sind daher eng mit einer effizienten Organisation von Gesundheitsdienstleistungen durch die Sozialversicherungen verknüpft. Das **Vertragspartnerrecht** regelt die Leistungsabgeltung von Gesundheitsdienstleistungen zwischen der sozialen Kranken-, Unfall und Pensionsversicherung und Gesundheitsdiensteanbietern. Die Gesundheitsdiensteanbieter werden auf kollektiver Ebene, in dieser Konstellation primär durch neun Landesärztekammern, die österreichische Ärztekammer, bzw. durch die

Wirtschaftskammern und die Zahnärztekammer vertreten. Im bestehenden System haben die VertreterInnen der **Gesundheitsdiensteanbieter** starke **Gestaltungsrechte**, die nicht mit einer Beschaffung auf freien Markt vergleichbar sind.

Zu klären ist, wie das **Verhältnis zwischen Sozialversicherung** auf der einen Seite und **Gesundheitsdiensteanbietern** auf der anderen Seite modernisiert werden kann, beziehungsweise wie entsprechende Regelungen ausgestaltet sein müssten. Dabei sind internationale Best-Practice Beispiele heranzuziehen.

Das **Kostenoptimierungspotential** durch die **Beschaffung von Gesundheitsdienstleistungen unter flexibleren Rahmenbedingungen** ist zu erheben. Dabei ist immer auf das Leistungsniveau für die PatientInnen, auch im Zusammenhang mit der Leistungsharmonisierung auf ein relativ höheres Niveau, Bedacht zu nehmen.

Aufgabenstellung: Unter der Prämisse, die Versorgung der Versicherten zu verbessern, soll eine Analyse des derzeitigen Vertragspartnerrechts erstellt werden. Die Frage, ob eine flexiblere und transparente Organisation von Gesundheitsdienstleistungen Effizienzpotentiale gegenüber dem Status-Quo bietet, ist zu beantworten. Dabei ist auf international vergleichbare Best-Practice Modelle zu referenzieren. Besonders die Rolle der Systempartner für eine moderne Sachleistungsversorgung ist zu analysieren. Im Rahmen des Vertragspartnerrechts gilt es Sachleistungen zu stärken.

Aufgabenstellung: Erarbeitung von Vorschlägen zur Modernisierung des Vertragspartnerrechts, um die Organisation von Gesundheitsdienstleistungen nach flexibleren und transparenten Konditionen zu ermöglichen. Dabei ist das Ziel, Gesundheitsdienstleistungen auch weiter von österreichischen Anbietern zu beziehen, zu berücksichtigen.

Aufgabenstellung: Wie kann die Qualität der bezogenen Gesundheitsdienstleistungen und die transparente Weiterentwicklung im Patienteninteresse sichergestellt werden?

Aufgabenstellung: Gesundheitsdienstleistungen für die Bevölkerung anzubieten ist keine Beschaffung wie jede andere. Daher ist eine Abgrenzung, in welchen Bereichen das Vergaberecht nicht zur Anwendung kommen soll – vor allem um die Versorgungssicherheit durch inländische Anbieter sicherzustellen – zu treffen.

FINANZIERUNG: Fragestellungen aus dem Ist-Stand

Finanzstromanalyse: Weg der Geldmittel; Verteilung Einnahmen, Bedarf der Versicherten und Aufgaben

Die Finanzierung des Gesundheits- und Pensionssystems ist komplex. Dabei gibt es – vor allem was den Eigendeckungsgrad aus Beiträgen der Versicherten betrifft – große Unterschiede zwischen den

Sozialversicherungsträgern. Das Delta zwischen Eigendeckung und Bedarf wird aus Steuermitteln bedeckt. Gleichzeitig ist im Krankenanstaltenbereich die Finanzierung Ländersache und die Gesetzgebung zwischen Bund und Ländern geteilt. Um durch zielgerichtete Reformen die Kostenwahrheit und Effizienz zu steigern braucht es eine gesamtstaatliche Finanzstromdarstellung von Bund, Ländern und Gemeinden, sowie Sozialversicherung und anderen Versorgungssystemen. Als Basis für die Analyse sind bestehende Aufbereitungen – etwa *reporting tools* im Rahmen der Gesundheitsreform – heranzuziehen. Zudem soll eine kritische Analyse der Unterschiede, der Wirksamkeit und des Lenkungseffekts von **Behandlungsbeiträgen**, sowie deren Gesamtbelastung erfolgen.

Des Weiteren soll eine österreichweite **Gesamtdarstellung der Finanzströme im Ruhegenuss- und Pensionsbereich auf Bundesebene** erfolgen (inklusive Bundesbeamte und Vertragsbedienstete des Bundes).

Ebenso sollen die Einnahmen im Sozialversicherungs- und Gesundheitssystem einer umfassenden Analyse unterzogen und auf potentielle Systemwidrigkeiten – vor allem Zuschüsse aus dem Steuertopf für die verschiedenen Sparten der Pensionsversicherung (Partnerleistung) in Betracht ziehend – untersucht werden.

Eine weitere Fragestellung ist, ob die **strategische Position der Sozialversicherung** im Bereich der Systemsteuerung gestärkt werden soll. So könnten Gesundheitsdienstleistungen im niedergelassenen Bereich nicht nur über Vertragsbeziehungen zugekauft werden, sondern verstärkt selbst angeboten werden. Eine ökonomische Analyse möglicher Vorteile und der potentiellen Kosteneinsparungseffekte ist zu erarbeiten. Die Vorteile einer Kombination aus *make and buy* im Bereich der eigenen Einrichtungen soll dargestellt werden.

Es ist darüber hinaus ein System der mittelfristigen verbindlichen **Investitionsplanung** der gesamten Sozialversicherung in Verwaltungs- und Gesundheitseinrichtungen, Bau- und IT-Investitionen für ambulante Versorgung samt IT-Infrastruktur zu entwickeln.

Die derzeitige Finanzierungslandschaft birgt **Schief lagen** zwischen den einzelnen Versichertengruppen und den SteuerzahlerInnen insgesamt. Es gibt nur einen **unzureichenden Risikostrukturausgleich**. Die Gebietskrankenkassen schultern besondere **Risiken der Versichertenstruktur** (z.B. Arbeitslose, Mindestsicherungsbezieher, Asylwerber usw.), die andere Träger nicht zu tragen haben. Unabhängig von der organisatorischen Ausgestaltung als bundesweiter Träger oder regionaler Träger sollen zusätzliche Risikofaktoren ausgeglichen werden (Unterschied zwischen urbaner und ruraler Risikoverteilung). Das **deutsche Modell des morbiditätsorientierten Risikostrukturausgleichs** ist ein Beispiel der risikoorientierten Finanzierung, das beleuchtet werden soll. Modelle zum Risikoausgleich, welche mit der österreichischen Systemlogik in Einklang gebracht werden können, sind zu erstellen.

Mehrfachversicherte und ihre Angehörigen sind unter Umständen mehreren Trägern zugeordnet. Beiträge fließen an mehrere Träger und die Leistungen können von Versicherten pro Versicherungsfall bei unterschiedlichen Trägern konsumiert werden (persönliche Wahlfreiheit). Daher sind die typischen unterschiedlichen Fallvarianten zu Mehrfachversicherungen (mehrere Erwerbstätigkeiten, Eltern von mitversichertem Kind, die bei verschiedenen Trägern versichert sind, usw.) zu untersuchen. Es soll ein in Österreich implementierbarer Ausgleichsmechanismus entwickelt

werden. Ein Ziel des Ausgleichsmechanismus soll die Ermöglichung der **Zusammenrechnung der Beitragsgrundlagen von Beamten und sonstigen Versicherten** sein.

Aufgabenstellung: Erstellung einer gesamtheitlichen Finanzstromanalyse über alle relevanten Systeme und Gebietskörperschaften (einschließlich der dienstrechtlichen Versorgungssysteme) mit besonderem Fokus auf Fragen der Kostenwahrheit. Dabei ist auf die Eigendeckungsgrade der Träger, die unterschiedliche Höhe der Partnerleistung und die Hebesätze einzugehen.

Aufgabenstellung: Analyse der Wirksamkeit von Behandlungsbeiträgen, insbesondere in Hinblick auf Lenkungseffekte und dadurch resultierende vermeidbare Folgekosten.

Aufgabenstellung: Prüfung der potentiellen Vorteile einer Kombination von *make and buy* in Bezug auf Effizienz und Qualitätssteigerungen. Dabei ist insbesondere auf den Bereich der eigenen Einrichtungen einzugehen.

Aufgabenstellung: Erstellung einer einheitlichen mittelfristigen Investitionsplanung durch die Träger unter Bündelung der Ressourcen.

Aufgabenstellung: Analyse der Risikostruktur zwischen den Trägern und Erarbeitung eines risikobasierten Ausgleichsmechanismus und Analyse der Ungleichverteilung der Kostentragung der Träger bei Mehrfachversicherten und Erarbeitung eines Ausgleichsmechanismus.

Aufgabenstellung: Analyse der Gründe für die bestehende komplette Trennung der Systeme von BeamtInnen und allen anderen Versicherten (insbesondere Beitragsgrundlagenbildung), darauf aufbauend Erarbeitung eines Vorschlags zur Beseitigung der Trennung.

Bekämpfung von Betrug und Irrtum (*fraud and error*)

Das österreichische Gesundheitssystem bietet Leistungen auf höchstem Niveau. Allerdings ist in jedem System Betrugsbekämpfung und die Eindämmung von Abrechnungsfehlern von hoher Priorität. Auf **EU-Ebene** ist ein Projekt zur Bekämpfung von *transborder fraud and error* im Gesundheitssystem aufgesetzt. Dieses Thema soll umfassender, unter Einbeziehung der österreichischen Dimension, aufgearbeitet werden. In Deutschland wird von einem Verlust durch *fraud and error* von € 7,5 bis € 12,5 Milliarden ausgegangen, das ist ein Potential von drei bis fünf Prozent der öffentlichen Gesundheitsausgaben. Auf Österreich umgelegt wären das € 0,75 bis € 1,25 Milliarden.

Die Bekämpfung von *fraud and error* ist internationaler Standard. **Starke Strukturen in Österreich** sind zu entwickeln. Es ist ein angemessenes Verhältnis zwischen dem Aufwand bei der Beitragseinbringung und der ungenügenden Kontrolle der Geldflüsse im Ausgabenbereich (Leistungsbereich) herzustellen.

Aufgabenstellung: Abschätzung der durch *fraud and error* in Österreich verlorenen Mittel.

Aufgabenstellung: Erarbeitung von Vorschlägen zur Bekämpfung von *fraud and error*.

Investition in neue Themenfelder

Marktveränderungen im Medikamentenbereich machen internationales Handeln und Kooperieren nötig. Systemrelevante Steuerungsfunktionen müssen in ausreichender Dimension, Qualität und Quantität sichergestellt sein (Marktbeobachtung usw.). Internationale Beispiele für Kooperationen bei Beschaffung sind auf ihre Übertragbarkeit zu prüfen. **Aufgabenstellung:** Internationale Analyse der Beschaffung von Medikamenten mit besonderem Fokus auf Synergiepotentiale.

ZUKUNFTSFIT 2030 – die Finanzierung sicher für die Zukunft machen

„**Arbeit und Industrie 4.0**“ (*crowd working*, Digitalisierung, A-Typische Erwerbskarrieren) erfordert eine den Gedanken der Solidarität verankernde **Modernisierung von Sozial-, Arbeits-, Sozialversicherungs- und Steuerrecht**. Als weiteres Phänomen ist Steuerflucht und Abgabenvermeidung ein nicht unwesentlicher Störfaktor in Bezug auf eine umfassende Finanzierung des Sozialsystems. Am sich abzeichnenden Übergang vom postindustriellen in das digitale Zeitalter ist die Mittelaufbringung eines bisher am Faktor Arbeit anknüpfenden beitragsorientierten Sozialversicherungssystems rechtzeitig grundlegend neu auszurichten.

Eine **Verbreiterung und Ergänzung der Finanzierung** soll bei gleichzeitiger Entlastung des Faktors Arbeit angedacht werden. Die Produktivität der Volkswirtschaften steigt, ohne dass das Arbeitsplatz-Angebot immer zwingend nachzieht. Deshalb soll eine Mittelaufbringung erarbeitet werden, die am Faktor der Produktivität und nicht mehr nur an den Beschäftigten ausgerichtet ist, bzw. weiters Steuerflucht hintanhaltet oder kompensieren kann.

Aufgabenstellung: Erarbeitung von Modellen zur Verbreiterung der Finanzierungsbasis der Sozialversicherung, insbesondere in Hinblick auf die Effekte der Digitalisierung, neuer Arbeitsformen und Versicherungskarrieren.

STRUKTURANALYSE: Modernisierung vorantreiben

Das österreichische Sozialversicherungssystem ist stabil und bietet den Menschen hervorragende Leistungen. Gleichzeitig gilt es, das System – um es für die Herausforderungen der Zukunft zu rüsten – weiterzuentwickeln und zu modernisieren. Dabei ist insbesondere die Reduktion der Trägerlandschaft zu prüfen. Hier ist vor allem die historisch gewachsene Struktur der Dreigliedrigkeit des Sozialversicherungssystems einer Analyse zu unterziehen.

Organisation der sozialen Sicherungssysteme

Neuere Sozialversicherungssysteme bestehen aus zwei Sparten, der Pensionsversicherung und der Krankenversicherung. Das bereits in der Monarchie wurzelnde österreichische System hat zusätzlich die Unfallversicherung als eigene Sparte. Daher sind die Vor- und Nachteile der Organisation in drei Sparten zu benennen und einem zweiseitigen Modell gegenüberzustellen. Sollte die Zweiseitigkeit sowohl effizienter, als auch effektiver erscheinen, ist die Verortung des bestehenden Haftungsprivilegs, das sowohl in der Pensionsversicherung, als auch der Krankenversicherung systematisch eingeordnet werden kann, zu klären. Es sind daher Vorschläge zu erarbeiten, wie das Haftungsprivileg analog der bestehenden Logik in Zukunft ausgestaltet werden kann.

Auch die Gliederung in Berufsständische und teilweise sogar durch den Dienstgeber determinierte sozialen Sicherungssysteme sind einer Analyse zu unterziehen. Die Vor- und Nachteile sind herauszuarbeiten und darzustellen. Ebenso ist die – die Mehrheit der Versicherten umfassende – regionale Gliederung zu bewerten.

Aufgabenstellung: Erstellung einer Stärken/Schwächen Analyse des bestehenden Systems der drei Sparten, insbesondere in Hinblick auf Effizienz und Effektivität.

Aufgabenstellung: Analyse, ob die Verbindung der Sparten in einem Träger (Mischträger) eine effektive und effiziente Organisationsform darstellt.

Aufgabenstellung: Wie kann bei einer Systemumstellung auf ein zweiseitiges System das bestehende Haftungsprivileg – analog der bestehenden Logik – ausgestaltet werden?

Aufgabenstellung: Welche weiteren Modelle zur Ausgestaltung der Trägerlandschaft können auf Basis der vorangegangenen Analysen zur Diskussion gestellt werden. Dabei ist insbesondere zu analysieren, ob die bestehende Gliederung nach Berufen, teilweise sogar nach Dienstgebern, oder nach Regionen, eine effiziente und effektive Form der Organisation darstellt. Die maßgeblichen Bewertungskriterien sind Service für die Versicherten, wirkungsvolle Leistungserbringung und deren Organisation, finanzielle Stabilität, sowie effiziente administrative Abwicklung. Dabei sind die Kosten, Nutzen und Risiken umfassender Umstrukturierungen einzuschätzen.

Analyse der strategischen Verwendung der Rücklagen

Bestehende **Rücklagen** sollen zielgerichtet für strategisch wichtige Themen der Gesundheitsreform verwendet werden. Im Fokus stehen insbesondere die Schaffung von Infrastruktur von Primärversorgungseinrichtungen, die Modernisierung eigener Einrichtungen der Sozialversicherung, ambulanter Einrichtungen, sowie die Leistungsharmonisierung und Fragen der gemeinsamen IT.

Aufgabenstellung: Erarbeitung eines Konzepts zur zielgerichteten Verwendung der Rücklagen zur Verbesserung der Leistungen für die Versicherten.

Verwaltung: Effizienzsteigerung und Synergiepotentiale

Die bestehenden Verwaltungsstrukturen sind auf ihre Effizienz zu überprüfen. Vorschläge zur Schärfung der **Managementstruktur und -prozesse** (Governance) der gesamten Sozialversicherung sind zu erarbeiten. Die Stringenz der Überarbeitung von Geschäftsprozessen vor der Neu- und Weiterentwicklung von **IT-Anwendungen** ist zu hinterfragen. Es ist zu prüfen, ob durch umfassendere straffe Führung der Sozialversicherungs-IT und die verbindliche Einbindung aller Versicherungsträger eine Effizienzsteigerung erreicht werden kann.

Einerseits sind die **Verwaltungskosten** einem **internationalen Vergleich** zu unterziehen, um ein objektives Bild zu erhalten. Andererseits zeigen rezente Studien aus Deutschland, dass in Folge von Fusionen von Krankenversicherungsträgern die Verwaltungskosten mit bis zu einem Fünftel über dem früheren Wert liegen. Die Analyse von Rürup (GKV. Verwaltungskosten und Kassengröße, 2006) weist im Verhältnis Verwaltungskosten je Versicherten und Größe der Versicherung **diseconomies of scale** aus. Dies ist einer qualitativen Analyse zu unterziehen und auf die österreichische Situation herunterzubrechen.

Aufgabenstellung: Analyse der Führungsstrukturen der Verwaltung der Sozialversicherungsträger und Prüfung, ob eine Verschlinkung der Führungsstrukturen der Verwaltung sinnvoll ist und wenn ja, Erarbeitung eines Vorschlags.

Aufgabenstellung: Analyse der Geschäftsprozesse in Hinblick auf die IT-Systeme.

Aufgabenstellung: Internationales Benchmarking der Verwaltungskosten der österreichischen Sozialversicherungsträger. **Aufgabenstellung:** Evaluierung der bestehenden Erfahrungen zur optimalen Größe von Sozialversicherungsträgern, insbesondere in Hinblick auf *diseconomies of scale*.

Aufgabenstellung: Evaluierung der Kosten bei einer potentiellen Reduktion der Trägerlandschaft

Appendix B: Stakeholder interviews

Stakeholder invitation

Outlined below is the invitation sent to each stakeholder including broad questions to discuss during roundtable discussions. Please note that the exact format of the interviews differed according to each stakeholder.



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20th January 2017

EINLADUNG ZUR TEILNAHME AN DER DISKUSSIONSRUNDE ÜBER DAS ÖSTERREICHISCHE SOZIALVERSICHERUNGSSYSTEM

Sehr geehrte(r) _____ [*insert name*],

Das LSE Health Forschungszentrum an der London School of Economics and Political Science wurde vor kurzem vom österreichischen Ministerium für Arbeit, Soziales und Konsumentenschutz beauftragt eine Studie zur Analyse des Sozialversicherungssystems durchzuführen. Die Analyse wird mehrere wichtige Komponenten innerhalb des österreichischen Sozialversicherungs- und Gesundheitswesens begutachten und bewerten, um eine Reihe von struktur- und gesundheitspolitischen Optionen zur Erhebung von Effizienz- und Qualitätspotentialen der zur Verfügung stehenden Dienstleistungen zu entwickeln.

Für die Begutachtung hat LSE Health einen internationalen Evaluierungsausschuss mit hochrangigen nationalen und internationalen Experten in den Bereichen Gesundheitspolitik, Gesundheitsökonomie und Recht gebildet. Der Ausschuss, der eine rein beratende Funktion ausüben wird, wird mit mehreren Intersektorenvertretern Gespräche führen, um Rückmeldungen und Einschätzungen zu verschiedenen Themen, die sich auf das österreichische Sozialversicherungssystem beziehen, zu erfassen.

Als Mitglied von [\[insert organisation\]](#) möchten wir Sie gerne offiziell zu einer einstündigen Diskussionsrunde mit Mitgliedern des Internationalen Evaluierungsausschusses und hochrangigen Vertretern des Ministeriums einladen.

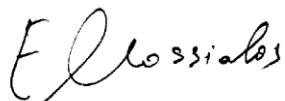
Die Diskussionsrunden mit Interessenvertretern der [\[enter stakeholder group\]](#) finden am [\[insert date\]](#) im Ministerium für Arbeit, Soziales und Konsumentenschutz [\[insert address of Ministry\]](#) statt. Die Diskussionen werden auf Englisch durchgeführt, jedoch kann ein Übersetzer auf Anfrage zur Verfügung gestellt werden.

Eine Liste mit allgemeinen Fragen, die wir gerne mit Ihnen besprechen möchten, befindet sich am Ende dieser Einladung. Bitte beachten Sie, dass Diskussionen über diese Fragen hinausgehen können, um Ihnen die Möglichkeit zu geben, zusätzliche Kommentare zu äußern. Nach Abschluss der Diskussion bitten wir die Teilnehmer, schriftliche Rückmeldungen zu verfassen, welche in den Abschlussbericht eingehen werden.

Wenn Sie Interesse an einer Teilnahme an den Diskussionsrunden haben, würden wir uns sehr freuen, wenn Sie Ihre Teilnahme bestätigen und Ihre Verfügbarkeit für das angegebene Datum frühestmöglich mitteilen könnten. Falls Sie es vorziehen, eine andere Person in Ihrer Organisation zu empfehlen, senden Sie uns bitte deren Namen, Position und Email Adresse.

Für weitere Information finden Sie hier einen [Link](#) zur offiziellen Pressemitteilung des Ministeriums. Sollten Sie noch weitere Fragen haben, stehen Ihnen [\[insert Ministry representative and contact email\]](#) oder Inna Thalmann von LSE Health (I.N.Thalmann@lse.ac.uk) gerne zur Verfügung.

Mit freundlichen Grüßen



Univ.-Prof. Dr Elias Mossialos

Brian Abel-Smith Professor of Health Policy

Department of Social Policy, LSE

Director of LSE Health

Fragen zur Diskussionsrunde

1. Was sind Ihrer Einschätzung nach die Prioritäten im Gesundheitswesen und bei der Primärversorgung in Österreich?

2. Gibt es bestimmte wichtige Prioritäten im Gesundheitswesen, die momentan nicht oder nicht im ausreichendem Ausmaß im österreichischen Gesundheitssystem enthalten oder implementiert sind?

3. Welche Bereiche, falls zutreffend, bedürfen weiterer Aufmerksamkeit im jetzigen österreichischen Sozialversicherungssystem und weshalb?

4. Wie könnten die Standards der Leistungserbringung, die Effizienz und Effektivität in dem jetzigen österreichischen Sozialversicherungssystem weiter verbessert werden?