Health Systems in Transition
Vol. 22 No. 6 2020

Germany
Health system review

Miriam Blümel
Anne Spranger
Katharina Achstetter
Anna Maresso
Reinhard Busse

Technische Universität Berlin
European Observatory on Health Systems and Policies
a partnership hosted by WHO

Anna Maresso (Editor) and Ewout van Ginneken (Series editor)
were responsible for this HiT

Editorial Board

Health Systems in Transition

Germany

Health System Review 2020

Miriam Blümel
European Observatory on Health Systems and Policies and Department of Health Care Management, Berlin University of Technology

Anne Spranger
European Observatory on Health Systems and Policies and Department of Health Care Management, Berlin University of Technology

Katharina Achstetter
Department of Health Care Management, Berlin University of Technology

Anna Maresso
European Observatory on Health Systems and Policies

Reinhard Busse
European Observatory on Health Systems and Policies and Department of Health Care Management, Berlin University of Technology

The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of health systems in Europe. It brings together a wide range of policy-makers, academics and practitioners to analyse trends in health reform, drawing on experience from across Europe to illuminate policy issues.

The Observatory is a partnership, hosted by WHO/Europe, which includes other international organizations (the European Commission, the World Bank); national and regional governments (Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas)); other health system organizations (the French National Union of Health Insurance Funds (UNCAM), the Health Foundation); and academia (the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM)). The Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

KEYWORDS:

DELIVERY OF HEALTH CARE
EVALUATION STUDIES
FINANCING, HEALTH
HEALTH CARE REFORM
HEALTH SYSTEM PLANS – organization and administration
GERMANY

Please address requests about the publication to:

Publications,
WHO Regional Office for Europe,
UN City,
Marmorvej 51,
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office website (http://www.euro.who.int/pubrequest)

Suggested citation:

Blümel M, Spranger A, Achstetter K, Maresso A, Busse R. Germany: Health system review. Health Systems in Transition, 2020; 22(6): pp.i–273.

Print ISSN 1817-6127 Vol. 22 No. 6
Web ISSN 1817-6119 Vol. 22 No. 6

CONTENTS

PREFACE

The Health Systems in Transition (HiT) series consists of country-based reviews that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each review is produced by country experts in collaboration with the Observatory's staff. In order to facilitate comparisons between countries, reviews are based on a template, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a report.

HiTs seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe. They are building blocks that can be used to:

- learn in detail about different approaches to the organization, financing and delivery of health services, and the role of the main actors in health systems;
- describe the institutional framework, process, content and implementation of health care reform programmes;
- highlight challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- assist other researchers in more in-depth comparative health policy analysis.

Compiling the reviews poses a number of methodological problems. In many countries, there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different sources, including the World Health Organization (WHO) Regional Office for Europe's European Health for All database, data from national statistical offices,

Eurostat, the Organisation for Economic Co-operation and Development (OECD) Health Data, data from the International Monetary Fund (IMF), the World Bank's World Development Indicators and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate review.

A standardized review has certain disadvantages because the financing and delivery of health care differ across countries. However, it also offers advantages because it raises similar issues and questions. HiTs can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situations. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to info@obs.euro.who.int.

HiTs and HiT summaries are available on the Observatory's web site (http://www.healthobservatory.eu).

ACKNOWLEDGEMENTS

The Health Systems in Transition (HiT) profile on Germany was co-produced by the European Observatory on Health Systems and Policies and the Berlin University of Technology, which is a member of the Health Systems and Policy Monitor (HSPM) network.

The HSPM is an international network that works with the Observatory on Country Monitoring. It is made up of national counterparts that are highly regarded at national and international level and have particular strengths in the areas of health systems, health services, public health and health management research. They draw on their own extensive networks in the health field and their track record of successful collaboration with the Observatory to develop and update the HiT.

This edition was written by Miriam Blümel, Anne Spranger and Katharina Achstetter (all from the Department of Health Care Management at the Berlin University of Technology). It was edited by Anna Maresso and Reinhard Busse. The basis for this edition was the previous HiT on Germany, which was published in 2014, and written by Miriam Blümel and Reinhard Busse, as well as the 2017 published profile *Das deutsche Gesundheitssystem. Akteure, Daten, Analysen* written by Reinhard Busse, Miriam Blümel and Anne Spranger.

The European Observatory on Health Systems and Policies is grateful to Franz Knieps (BKK Dachverband e.V.) and Thomas Rice (Professor at the Department for Health Policy and Management, UCLA Fielding School of Public Health) for reviewing the report. Thanks are also extended to our colleagues at the Department of Health Care Management who were invaluable in reviewing individual chapters of this book and so freely shared their expertise (in alphabetical order): Elke Berger, Hanna Ermann, Julia Köppen, Hendrikje Lantzsch, Ulrike Nimptsch, Dimitra Panteli, Christoph Reichebner, Wilm Quentin and Juliane Winkelmann. Thanks also to our student assistants Alessandro Campione, Judith Lukács, Philipp Hengel and Matthias Haltaufderheide for their help in compiling this publication.

The authors are also grateful to everyone at the Federal Ministry of Health for their assistance in providing information and for their invaluable comments on previous drafts of the manuscript and suggestions about plans and current policy options in the German health system.

Thanks are also extended to the WHO Regional Office for Europe for their European Health for All database from which data on health services were extracted, and to the WHO global health expenditure database for data on health expenditure; to the OECD for the data on health services in western Europe; to the World Bank for the data on health expenditure in European countries, and the European Commission for the Eurostat database. Further thanks are due to national statistical offices that have provided data, namely the German Federal Statistical Office and GBE-Bund, as well as other organizations, institutions and associations which have contributed data.

The HiT reflects the organization of the health system and data availability as it was in August 2020, unless otherwise indicated.

The Observatory is a partnership that includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Sweden, Switzerland and the United Kingdom; the Veneto Region of Italy (with Agenas); the French National Union of Health Insurance Funds (UNCAM); the World Health Organization; the European Commission; the World Bank; the London School of Economics and Political Science (LSE); and the London School of Hygiene & Tropical Medicine (LSHTM). The partnership is hosted by the WHO Regional Office for Europe. The Observatory is composed of a Steering Committee, core management team, research policy group and staff. Its Secretariat is based in Brussels and has offices in London at LSE, LSHTM and the Technical University of Berlin. The Observatory team working on HiTs is led by Josep Figueras, Director; Elias Mossialos, Martin McKee, Reinhard Busse (Co-directors); Richard Saltman, Ewout van Ginneken and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Anna Maresso. The production and copy-editing process was coordinated by Jonathan North, with the support of Lucie Jackson.

This health system review was written mainly during the COVID-19 related lock-down in Germany during 2020 and our enduring thanks go to our families and friends for bearing this special time, and our working hours, with us.

LIST OF ABBREVIATIONS

	GERMAN	ENGLISH
AdH	*Auswahlverfahren der Hochschulen*	Selection procedure conducted by the universities
AfD	*Alternative für Deutschland*	Alternative for Germany
AGnES	*Arztentlastende, Gemeindenahe, E-Health-gestützte, Systemische Intervention*	GP-supporting, community-based, e-health-assisted systemic intervention
AHRQ		Agency for Healthcare Research and Quality
AIDS		Acquired Immune Deficiency Syndrome
ALOS		Average length of stay
AMI		Acute myocardial infarction
AOK	*Allgemeine Ortskrankenkasse*	General Regional Sickness Funds
ASV	*Ambulante spezialfachärztliche Versorgung*	Highly specialized medical care provided by specialists in outpatient care
AWMF	*Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften e.V.*	Association of the Scientific Medical Societies in Germany
BaFin	*Bundesanstalt für Finanzdienstleistungsaufsicht*	Federal Financial Supervisory Authority
BÄK	*Bundesärztekammer*	German Medical Association
BAS	*Bundesamt für Soziale Sicherung*	Federal Office for Social Security
BEL II	*Bundeseinheitliches Verzeichnis der abrechnungsfähigen zahntechnischem Leistungen*	Uniform Value Scale for Dental Technicians
BfArM	*Bundesinstitut für Arzneimittel und Medizinprodukte*	Federal Institute for Pharmaceuticals and Medical Devices
BfR	*Bundesinstitut für Risikobewertung*	Federal Institute for Risk Assessment
BGB	*Bürgerliches Gesetzbuch*	German Civil Code
BKK	*Betriebskrankenkasse*	Company-based sickness funds
BMAS	*Bundesministerium für Arbeit und Soziales*	Federal Ministry of Labour and Social Affairs

	GERMAN	ENGLISH
BMEL	*Bundesministerium für Ernährung und Landwirtschaft*	Federal Ministry of Food and Agriculture
BMFSFJ	*Bundesministerium für Familie, Senioren, Frauen und Jugend*	Federal Ministry of Family Affairs, Senior Citizen, Women and Youth
BMG	*Bundesministerium für Gesundheit*	Federal Ministry of Health
BMJV	*Bundesministerium der Justiz und für Verbraucherschutz*	Ministry of Justice and Consumer Protection
BPtK	*Bundespsychotherapeutenkammer*	Federal Chamber of Psychotherapists
BVL	*Bundesamt für Verbraucherschutz und Lebensmittelsicherheit*	Regulatory body for the Federal Office of Consumer Protection and Food Safety
BVPG	*Bundesvereinigung Prävention und Gesundheitsförderung e.V.*	Federal Association of Prevention and Health Promotion
BZgA	*Bundeszentrale für gesundheitliche Aufklärung*	Federal Centre for Health Education
CDU/CSU	*Christlich Demokratische Union/ Christlich-Soziale Union*	Christian Democratic Union/Christian Social Union
CE		Conformité Européenne
CHF		Congestive heart failure
COPD		Chronic obstructive pulmonary disease
COVID-19		Coronavirus Disease 2019
CT	*Computertomograph*	Computed Tomography
DDD		Defined daily doses
DEGS	*Studie zur Gesundheit Erwachsener in Deutschland*	German Health Interview and Examination Survey for Adults
Destatis	*Statistisches Bundesamt*	German Federal Statistical Office
DIMDI	*Deutsches Institut für Medizinische Dokumentation und Information*	German Institute for Medical Documentation and Information
DKF	*Deutsches Kompetenzzentrum für internationale Fachkräfte der Gesundheits- und Pflegeberufe*	German Competence Centre for International Health and Care Professions
DKFZ	*Deutsches Krebsforschungszentrum*	German Cancer Research Centre
DKG	*Deutsche Krankenhausgesellschaft*	German Hospital Federation
DMP		Disease Management Programmes
DRG		Diagnosis-Related Group
DVT		Deep vein thrombosis
EBM	*Einheitlicher Bewertungsmaßstab*	Uniform value scale

	GERMAN	ENGLISH
ECHI		European Core Health Indicators
EEA		European Economic Area
eGA	*Elektronische Gesundheitsakte*	Electronic Patient Files by individual sickness funds based solely on administrative data
eGK	*Elektronische Gesundheitskarte*	Electronic health card
ePA	*Elektronische Patientenakte*	Electronic patient file
EHIS		European Health Interview Survey
EMA		European Medicines Agency
EMS		Emergency Medical Services
ENT		Ear, Nose and Throat Physicians
EU		European Union (27 Member States as of 2020)
EUDAMED		European Databank on Medical Devices
EU-SILC		European Union Statistics on Income and Living Conditions
EVA	*Entlastende Versorgungsassistentin*	Supporting physician assistant
FDP	*Freie Demokratische Partei*	Free Democratic Party
FFS		Fee-for-service
FTE		Full-time-equivalents
GAmSi	*GKV-Arzneimittel-Schnellinformation*	Fast information on medicinal products
GBE Bund	*Gesundheitsberichterstattung des Bundes*	Federal Health Reporting
GDP		Gross domestic product
GEDA	*Gesundheit in Deutschland aktuell*	German Health Update
GKV-Spitzen-verband	*Spitzenverband der gesetzlichen Krankenversicherungen*	Federal Association of Sickness Funds
GOÄ	*Gebührenordnung für Ärzte*	Price List for Privately Delivered Medical Services
GP		General practitioner
HbA1c	*Glykiertes Hämoglobin*	Glycated haemoglobin
HIV		Human Immunodeficiency Virus
HMV	*Hilfsmittelverzeichnis*	Catalogue of Medical Aids
HP		Classification of Health Care Providers According to System of Health Account

	GERMAN	ENGLISH
HPV	*Humanes Papillomvirus*	Human papillomavirus
HSPA		Health System Performance Assessment
HTA		Health technology assessment
HZV	*Hausarztzentrierte Versorgung*	GP-centred model
ICD		International Classification of Diseases
ICF		International Classification of Functioning, Disability and Health
IGeL	*Individuelle Gesundheitsleistungen*	Individual health services
IHK	*Industrie-und Handelskammer*	Chamber of Industry and Commerce
IHME		Institute for Health Metrics and Evaluation
InEK	*Institut für das Entgeltsystem im Krankenhaus*	German National Institute for the Reimbursement of Hospitals
INZ	*Integriertes Notfallzentrum*	Integrated emergency centre
IQTIG	*Institut für Qualitätssicherung und Transparenz im Gesundheitswesen*	Institute for Quality Assurance and Transparency in Healthcare
IQWiG	*Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen*	Institute for Quality and Efficiency in Healthcare
KBV	*Kassenärztliche Bundesvereinigung*	Federal Association of SHI Physicians
KdöR	*Körperschaften des öffentlichen Rechts*	Corporations Under Public Law
KiGGS	*Studie zur Gesundheit von Kindern und Jugendlichen in Deutschland*	German Health Interview and Examination Survey for Children and Adolescents
KOMV	*Wissenschaftliche Kommission für ein modernes Vergütungssystem*	Scientific Commission for a modern remuneration system
KV	*Kassenärztliche Vereinigung*	Regional Association of SHI Physicians
KZBV	*Kassenzahnärztliche Bundesvereinigung*	Federal Association of SHI Dentists
KZV	*Kassenzahnärztliche Vereinigung*	Regional Association of SHI Dentists
LTC		Long-term care
LTCI		Statutory long-term care insurance
MD	*Medizinischer Dienst der Krankenkassen*	Medical Review Board
MDB	*Medizinischer Dienst Bund*	Medical Review of the Statutory Health Insurance Funds

	GERMAN	ENGLISH
Morbi-RSA	*Morbiditätsorientierter Risikostrukturausgleich*	Morbidity-based risk-adjustment scheme
MRI		Magnetic Resonance Imaging
MRP		Mutual recognition procedure
MVZ	*Medizinisches Versorgungszentrum*	Interdisciplinary medical care centres
NäPA	*Nicht-ärztliche Praxisassistentin*	Non-physician office assistant
NATO		North Atlantic Treaty Organization
NEF	*Notarzteinsatzfahrzeug*	Emergency physicians' vehicle
NFS	*Notfallsanitäter*	Emergency paramedics
NPK	*Nationale Präventionskonferenz*	National Conference on Prevention
NVL	*Nationale Versorgungsleitlinien*	National Care Guidelines
OECD		Organisation for Economic Co-operation and Development
OOP		Out-of-pocket (payment)
OPS	*Operationen- und Prozedurenschlüssel*	German Procedure Classification
OTC		Over-the-counter
OTX		Prescribed non-prescription medication
PCI	*Perkutane Koronarintervention*	Percutaneous coronary intervention
PE		Pulmonary embolism
PEI	*Paul-Ehrlich-Institut*	Federal Institute for Vaccines and Biomedicines
PEPP	*Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik*	Flat-rate remuneration system for psychiatry and psychosomatics
PET		Positron-emission tomographs
PhD		Doctor of Philosophy
PHI		Private health insurance
PIA	*Psychiatrische Institutsambulanz*	Psychiatric outpatient department
PPP		Purchasing power parity
PREM		Patient-reported experience measures
PrEP		Pre-exposure-prophylaxis
PROM		Patient-reported outcome measures
PSI		Patient safety indicators

	GERMAN	ENGLISH
QEP	*Qualität und Entwicklung in Praxen*	Quality and Development in Physician Practices
RKI	*Robert Koch-Institut*	Robert Koch-Institute
RTW	*Rettungswagen*	Ambulance
SAPV	*Spezialisierte Ambulante Palliativversorgung*	Specialized ambulatory palliative care
SDR		Standardized death rate
SGB	*Sozialgesetzbuch*	Social Code Book
SHI		Statutory health insurance
SOEP	*Sozioökonomisches Panel*	Socio-economic panel
SPD	*Sozialdemokratische Partei Deutschland*	Social Democratic Party
STEMO		Stroke-emergency-vehicle
STIKO	*Ständige Impfkomission*	Standing Vaccination Commission
SVR	*Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen*	Advisory Council to Assess Developments in Health Care
UN		United Nations
UPD	*Unabhängige Patientenberatung Deutschland*	Independent Patient Counselling Service
VAT		Value added tax
VERAH	*Versorgungsassistentin in der Hausarztpraxis*	Care assistant in GP offices
WHO		World Health Organization
WTO		World Trade Organization
ZI	*Zentralinstitut für die kassenärztliche Versorgung in Deutschland*	Central Research Institute of Ambulatory Health Care in Germany

LIST OF TABLES, FIGURES AND BOXES

Tables

Figures

Boxes

ABSTRACT

This analysis of the German health system reviews recent developments in organization and governance, health financing, health care provision, health reforms and health system performance. Germany's health care system is often regarded as one of the best health care systems in the world, offering its population universal health insurance coverage and a comprehensive benefits basket with comparably low cost-sharing requirements. It provides good access to care with free choice of provider and short waiting times, which is partly due to good infrastructure with a dense network of ambulatory care physicians and hospitals, and a quantitatively high level of service provision. With the largest economy in the EU it is not surprising that Germany spends more than other countries on health, with most financing coming from public funds. The country had the highest per capita spending in the EU in 2018. In relation to overall health expenditure and available resources, a very high number of services is provided across sectors, particularly in hospital and ambulatory care. This can be seen as achieving a considerable level of technical efficiency. Given the high volumes, however, there are questions about the oversupply of services, as well as some comparatively moderate health and quality outcomes; from this perspective, there are signs that there is room for improvement in how the system allocates resources. Additional challenges in the German health system may be identified in: (1) the strong separation of ambulatory and inpatient care in terms of organization and payment, which can hinder the coordination and continuity of patient treatment; (2) the coexistence of statutory health insurance (SHI) and substitutive private health insurance (PHI), which weakens the principle of solidarity; and (3) a complex stewardship framework which promotes incrementalism and makes it more difficult to implement reforms.

EXECUTIVE SUMMARY

Germans can expect to live long lives but further modifying health behaviours is key to improving mortality and morbidity rates

Germany's health system serves 83 million inhabitants. With the largest – and growing – economy in the European Union (EU), Gross Domestic Product (GDP) stood at € 40 329 per capita in 2018. High living standards are accompanied by an extensive social security system; nevertheless, inequalities in terms of income and wealth have been growing over the last decade. Similar to the rest of the EU, Germany's population is ageing: one in five Germans is 65 years or older and around 6% of the population is over 80, with this segment forecast to grow even further. Average life expectancy at birth has increased by almost three years since 2000 and reached 81 years in 2018, slightly above the EU average. There are differences in life expectancy along gender, socioeconomic and regional lines.

The rise in life expectancy is fuelled mainly by decreasing mortality rates. Although the overall mortality rate for Germany was (still) higher than the EU average in 2017, the situation is improving and the gap is closing. Diseases of the circulatory system and malignant neoplasms (cancers) are the leading causes of mortality, and account for around 60% of all deaths, followed by diseases of the respiratory system, Alzheimer's disease and other dementias, and diseases of the digestive system. Health-related lifestyles and health behaviour, such as dietary habits, smoking and alcohol consumption, have a strong influence on the morbidity and mortality of the population. While smoking rates have fallen over the last decade they are still relatively high among both adults and adolescents. It is also estimated that dietary risk factors, such as obesity, account for about 19% of all deaths in Germany.

Health system governance is decentralized and complex, with competencies shared between the federal and state levels, and with self-governing corporatist bodies

Germany was the first country to introduce a system of social health insurance during the chancellorship of Otto von Bismarck in 1883. Continuous development and countless reforms have taken place since then, but the guiding principles of the initial legislation, such as the strong solidarity principle, are still intact. A unique feature in the German health system is the coexistence of statutory health insurance (SHI) and substitutive private health insurance (PHI), which together provide de facto universal health coverage. Only a small part of the population, based on their income, can actually choose between mandatory SHI and substitutive PHI, with the majority covered under the statutory scheme (see below). Statutory health insurance is a multi-payer system consisting of 105 sickness funds, while 42 private health insurance companies provide PHI. Those insured under SHI can freely choose between sickness funds and those insured under PHI are free to choose their private health insurers. Patients are helped by a multitude of available information and guiding organizations but face challenges in navigating through this information and assessing its quality.

Health system governance is complex and decentralized, divided between the federal and state levels, and corporatist bodies of self-governance. While the federal level sets the overall legal framework, state governments are responsible for hospital planning and public health services. However, most decision-making power within the SHI system is delegated to corporatist bodies. These corporatist bodies are "legitimized civil society organizations", such as associations of sickness funds and providers, which meet in the Federal Joint Committee to set out regulations in detail. Care sectors in the German health care system, such as public health, ambulatory and inpatient care, and long-term care are subject to different legislation and thus are separated in terms of organization, financing and reimbursement. Consequently, service provision is fragmented: coordination across sectors, quality assurance and a lack of integrated health information are recurrent concerns in health policy.

Coverage is universal and the population has access to a wide range of health services

Health insurance is compulsory in Germany, provided either under the SHI scheme or through substitutive PHI. Employees are usually insured in the SHI, but people whose income is above a fixed threshold or who belong to a certain professional group, e.g. the self-employed or civil servants, must or can opt to enroll in PHI for substitutive full coverage. Around 87% of the population is covered through SHI, while approximately 11% has substitutive PHI coverage. The other 2% (e.g. soldiers) are covered under special programmes. Around 61 000 people are uninsured.

SHI covers a broad benefits basket, well beyond essential services, and benefits are the same for all those insured. Individuals covered by substitutive PHI usually enjoy benefits equal to or better than those covered by SHI. Benefits covered by SHI are legally defined in generic terms at the federal level, while details and decisions on including new technologies, pharmaceuticals or medical devices in the benefits basket are at the discretion of the Federal Joint Committee. These decisions are guided by structured Health Technology Assessments and are binding for all sickness funds, providers and patients.

While health spending is relatively high, overall out-of-pocket expenditures by households is low

Germany spent € 390.6 billion on health in 2018, which corresponds to 11.7% of GDP. Per capita expenditure in 2018 was US$ 6098 (adjusted for differences in purchasing power). Germany is among the European countries with the highest health expenditure, with strictly public sources accounting for 73.5% of current expenditure on health and private sources accounting for 26.5%. There is a relatively low degree of cost sharing in Germany, with 13.6% of health spending coming from household out-of-pocket payments. User charges apply to inpatient stays, medical goods and some ambulatory services. More than a quarter of current health expenditure is spent on the inpatient sector (27.9%), closely followed by the ambulatory care sector (26.1%), long-term care (LTC) (14.8%) and pharmaceuticals (13.7%).

Contributions towards SHI constitute the major system of financing health care. The sickness funds are responsible for collecting contributions, which they transfer to a central reallocation pool known as the *Gesundheitsfonds*, which pools and reallocates the revenues according to a risk-adjustment mechanism. The general fixed SHI contribution rate is 14.6% of gross income and in addition sickness funds can charge a supplementary contribution which is, on average, 1%. Both contributions are equally shared between employer and employee. Non-earning spouses and children are insured free of charge. In contrast to SHI, PHI premiums are not dependent on income, but on age and health risk.

A variety of payment methods is used to reimburse providers

Services in ambulatory SHI care, provided by office-based physicians (general practitioners and specialists), dentists, pharmacists, midwives and many other allied health professionals, are subject to predetermined price schemes (which are different for SHI and PHI patients) and are usually paid on a fee-for-service basis. The inpatient sector is financed by two different sources: investments are financed through the states, while operating costs are financed through the sickness funds, private health insurers and self-pay patients via case fees (Diagnosis-related groups (DRGs)).

Capital investment in hospital infrastructure has been declining

Germany has the second highest number of acute beds – 6 per 1000 population – in the EU. There is a dense network of hospitals, with on average one hospital per 68 000 population, which ensures that there is a high level of availability of inpatient care. Virtually everyone in the country can reach an acute care hospital within 30 minutes by car; in urban areas 90% of people can do so within 15 minutes. Nevertheless, discrepancies in hospital density persist between states, which are responsible for capital investment and hospital planning. In a variety of states there has been a decrease in capital investment over the past 20 years. In 2017 only around half of the estimated investment needs (e.g. for medical equipment or renovation) was met in the inpatient sector. Hospitals attempt to fill this investment gap

through high activity levels and reimbursement of services by the sickness funds or by delaying renovation (such as the comprehensive modernization of IT-infrastructure).

Although the numbers of health professionals have been rising, some shortfalls are still reported

Health care is an important employment sector in Germany, with almost 5.7 million people working in the health sector, accounting for 12.3% of total employment. With an average of 431 practising physicians and 1322 practising nurses per 100 000 population, Germany's health workforce in these two professions was well above the EU averages in 2018 (3.7 and 8.4 respectively) (OECD, 2020b). But despite strong increases in the numbers of all health professionals over the last two decades, disparities in physician densities across states persist. In 2017 the Ministry of Labour reported a critical shortage of health workers, particularly for physicians, dentists, nurses, emergency care staff and midwives.

The main challenges for the provision of care are the strong sectoral separation of services and the undersupply of some providers

Health care sectors are very separate and organized differently along the lines of planning, financing, organization and governance. This fragmentation affects health care in terms of coordination, quality and efficiency. Public Health activities are carried out by a multitude of actors operating at municipal, state and federal level, but overall, the provision of services is primarily tasked to the states, the majority of which delegate operational responsibility to the municipalities. At the national level, the Robert Koch-Institute is the main authority for surveillance of communicable diseases and has been the key institution in monitoring and evaluating the key data on case numbers, transmission rates and mortality arising from the COVID-19 pandemic since it took hold in early 2020. Primary prevention programmes, such as screenings and childhood vaccinations, have been mainly carried out by SHI physicians.

The vast majority of health service providers in Germany serve both those covered by the SHI scheme and those with PHI. Patients can freely choose their physicians, general practitioners (GP) and specialists alike. GPs are usually the first point of contact with the health system – and GP competences to coordinate patients have been strengthened through, for example, GP-centred models of care. Nevertheless, they are not official gatekeepers. Both national and international data sources show high utilization rates for both outpatient and inpatient care. In general, there is good availability of providers, but several regions report an undersupply of several types of provider; rural areas are particularly affected.

All licensed prescription medicines are reimbursed

Pharmaceuticals may be dispensed by hospitals as well as through institutional and community pharmacies. Authorized mail-order and online pharmacies are subject to the same legal requirements and control mechanisms as traditional on-site pharmacies and are used predominantly to purchase OTC medicines. If pharmaceuticals are not labelled "pharmacy-only" they can also be authorized to be sold by drugstores, health food stores, supermarkets and food retail markets. Since the benefits basket includes all licensed prescription pharmaceuticals and there is no positive list of SHI-covered pharmaceuticals, most new and often very expensive pharmaceuticals are reimbursed. Current reform plans focus on the distribution of pharmaceuticals and improving access, e.g. via electronic prescriptions, repeat prescriptions, and fair competition between online pharmacies and local on-site pharmacies.

Significant reforms to long-term care have broadened eligibility and benefits

Long-term care is covered by specific statutory long-term care insurance. Entitlement is only available upon application and is subject to evaluation, whereby entitled applicants are categorized into one of five care grades. Recipients of home care can choose between benefits-in-kind and cash benefits, while some 830 000 recipients are living in nursing

homes. Reform initiatives between 2015 and 2017 aimed at achieving higher flexibility to combine the two strands of benefits (cash benefits and in-kind services) and also broadened eligibility and benefits. Even though there has been an increase in the total number of people covered under the statutory long-term care insurance scheme, the vast majority of recipients are cared for at home by informal carers (3.1 million) rather than in residential care. Relatives make up the biggest group of those providing care (between 1.8 million up to 5 million, varying according to estimation models).

Mental health care has expanded over the last two decades

The focus on mental health care is growing and currently it has the third highest spending by disease category. The provision of services remains fragmented along the lines of ambulatory, inpatient and rehabilitative care. Ambulatory care for mentally ill adults and children is supported by an increasing number of office-based psychiatrists, neurologists and psychotherapists. The last 20 years has seen an increase in capacity through specialized hospitals and specialized mental health wards housed within general hospitals, as well as community-based institutions, especially supervised residential arrangements, ambulatory crisis intervention centres, and centres for psychosocial counselling and social support.

Incremental changes in many policy areas are the norm while reforms promoting digitalization of health care are accelerating

Since 2012 the German health care system has been mainly characterized by stability and adherence to the basic structures and principles of statutory health insurance. Nonetheless, the frequency of legislative changes is extraordinarily high – in 2019 one law was passed every month. In most cases this activity is focused on incremental changes and implementation measures within individual sectors rather than landmark reforms, which were seen in previous times.

Key areas of change have been in assuring equal access to ambulatory care, quality assurance in inpatient care, and strengthening coordination of

care (i.e. disease management programmes for 10 chronic diseases, integrated care, strengthened competencies of GPs). Another reform area has been the curricula, training and qualification requirements for health personnel. The reforms to the national standards for curricula and examination are structured according to individual health professions and aimed at securing a sustainable health professional workforce.

Digitalization of the German health care system has been a major reform undertaking. At the core of this drive is the implementation of the electronic health card and a secure data exchange network among providers. Implementation of the original 2005 legislation on the electronic health card stalled, but picked up speed in 2019 and 2020. Since 2015 the use of electronic health cards has been compulsory for people to be entitled to SHI benefits, while a basic roll-out of card readers and other technical equipment in physician, dentist and psychotherapist practices was completed in July 2019. Other functionalities, such as storing emergency data, electronic patient files, electronic prescriptions and electronic medication plans are still in the process of implementation.

Accessibility to health care is high, and cost is not a barrier to accessing services

Germany provides universal health coverage to its population with a broad benefits package and low cost-sharing requirements. A dense network of health care facilities and high numbers of doctors and nurses ensure that overall there is high availability of services across the country, albeit with lower accessibility in rural areas, and only few people report unmet needs for medical care. What is more, current reforms aim to improve access to out-of-hours care, e.g. by establishing appointment service centres, and to enforce the legal mandate to take out either SHI or substitutive PHI. The comparatively low share of out-of-pocket payments in health financing and financial safety nets contribute to strong financial protection for the population. Consequently, levels of catastrophic health expenditure among the population are lower than in most other European countries.

Progress has been made on quality assurance and population health outcomes

The quality of ambulatory care in Germany is comparable to neighbouring countries, while the quality of inpatient health care, as measured by a set of defined indicators, has improved since 2000. However, there is room for improvement, particularly on metrics such as hospital mortality within 30 days after admission for an acute myocardial infarction. In terms of quality assurance there has been progress: the Institute for Quality Assurance and Transparency in Healthcare (IQTIG) was founded in 2015 specifically to develop cross-sectoral quality indicators, all with the aim of improving the quality of care, and to link health and quality outcomes with the planning and payment of service providers.

Population health outcomes, reflected by data on amenable and preventable mortality, have also improved over the last two decades, showing the capacity of the health system to treat diseases in a timely and appropriate manner or to avoid the onset of diseases altogether. However, compared to other European countries, based on this metric and other population health outcomes, Germany's results are varied and inequities exist along socioeconomic and regional lines. Although it is difficult to attribute direct causal links between the health system and population health, the evidence shows that health expenditures are higher than in most other European Union countries, and, thus, from a macro-economic perspective, the somewhat mixed outcomes are achieved at a relatively high cost. In particular, Germany has large human, technical and infrastructural capacities at its disposal and makes frequent use of these resources. Utilization of both inpatient and outpatient care is high and there are some indications of oversupply of services, a phenomenon that is also visible in high pharmaceutical consumption.

Looking ahead

The German health care system has many strengths and is often regarded as one of the best health care systems in the world, offering its population universal health insurance coverage, a comprehensive benefits basket with comparably low cost-sharing requirements and good access to care. Continued challenges include dealing with the strong separation of ambulatory and

inpatient care, which tends to hinder the coordination and continuity of patient treatment; the coexistence of SHI and substitutive PHI, which weakens the principle of solidarity; and a complex stewardship framework which promotes incrementalism and makes it more difficult to implement reforms. A potentially rewarding way to address these challenges more explicitly may be through the major stakeholders – federal government, the states and the various organs of self-government – coming together to devise an overarching vision of health system priorities and desired outcomes.

1

Introduction

- Germany has a population of about 83 million people (in 2018). Berlin, the capital and largest city, has about 3.7 million inhabitants. Germany's population is ageing – one in five people are 65 or older.
- The country has the largest – and growing – economy in the EU; it recovered quickly from the downturn during the economic crisis in 2009. Gross domestic product (GDP) per capita was € 40 339 in 2018. Despite its wealth and well-developed social security system, there are growing inequalities among the population. Although unemployment is falling, the share of people at risk of poverty or social exclusion has not decreased noticeably over the last two decades.
- Germany is a federal and parliamentary republic led by a chancellor, and consists of 16 states which have legislative authority, except in areas where authority has been reserved explicitly for the federal level. Given this shared power, health care policy and legislation is formulated at both the federal and state level.
- Life expectancy at birth has increased by almost three years since 2000 and reached 81.0 years in 2018. Nevertheless, it is lower than in most other western European countries. There are differences in life expectancy in terms of gender and socioeconomic status, with women and higher income groups living longer.
- The mortality rate for all causes was somewhat higher in Germany than the EU average in 2016. The two most common causes of death, by far, are diseases of the circulatory system and malignant neoplasms (cancers), followed by diseases of the respiratory system, Alzheimer's and other dementias, and diseases of the digestive system.

- Health-related lifestyles and health behaviour have a strong influence on the morbidity and mortality of the German population. About 40% of deaths in Germany result from behavioural risk factors, such as dietary risks, tobacco smoking, alcohol consumption and low physical activity.

1.1 Geography and socio-demography

The Federal Republic of Germany is situated in central Europe and covers an area of approximately 357 000 km^2. It shares borders with Denmark, Poland, the Czech Republic, Austria, Switzerland, France, Luxembourg, Belgium and the Netherlands (Figure 1.1). As of December 2018, Germany had some 83 million inhabitants (42 million women and 41 million men). Population density in the eastern part of the country is lower than in the western part and also varies considerably between the 16 states, ranging from 69 inhabitants per km^2 in Mecklenburg-Western Pomerania to 3948 inhabitants per km^2 in Berlin. Berlin is the country's capital and, with 3.7 million residents, its largest city.

The number of inhabitants had started to decrease from 2005 and reached its lowest point in 2011* but since then has grown steadily, with a sharp increase since 2015 (Table 1.1). Since the fertility rate has remained relatively constant, population growth is mainly due to the positive migration balance in recent years (Statistisches Bundesamt, 2019a). Immigration peaked in 2015 with 2.1 million immigrants and a net migration of 1.1 million people. Net migration to Germany decreased again in the three following years (Bundesamt für Migration und Flüchtlinge, 2019).

Similar to the rest of the European Union (EU), the German population is ageing and trends in the population age distribution are expected to become more pronounced in the future. The share of the population under 15 years of age, for example, was 13.1% both in 1995 and 2018, whereas the share of those aged 65 or older exceeds that of younger people and increased from 15.5% to 21.7% (Table 1.1). This is the second highest share among EU Member States after Italy. In addition, the share of the population aged 80 or

* Data from the 2011 German census (published in 2013) registered a population decrease of some 1.2 million inhabitants. Data here and in the following calculations are based on the information of the census and therefore include a break in time series.

older increased from 4% in 1995 to 6% in 2018 and is expected to increase to between 9% and 13% by 2060 (depending on the underlying assumptions of different forecasting models), which will have a considerable impact on health and long-term care services (Statistisches Bundesamt, 2019a); see Section 5.8 Long-term care.

FIGURE 1.1 Map of Germany and neighbouring countries

Source: European Observatory on Health Systems and Policies ©

TABLE 1.1 Trends in population/demographic indicators, 1995–2018 or latest year available

	1995	2000	2005	2010	2015	2018
Total population[a]	81 538 603	82 163 475	82 500 849	81 802 257	81 197 537	82 792 351
Population aged under 15 (% of total)[b]	13.1	15.7	14.4	13.6	13.1	13.1
Population aged 65 and above (% of total)[b]	15.5	16.5	18.9	20.5	21.1	21.7
Population density (per km^2)[b]	234	236	236	235	234	237
Population growth (average over 12 months of the year)[a]	0.29	0.14	-0.06	-0.15	0.87[b]	0.33[c]
Fertility rate, total[a] (births per woman)	-	1.38	1.34	1.39	1.50	1.57*
Distribution of population (urban:rural) (%)[c]	74:26	75:25	76:24	77:23	77:23	77:23*

Sources: [a]Eurostat, 2020a [b]Statistisches Bundesamt, 2019b, [c]World Bank Group, 2020
Note: * data refer to the year 2017

The proportion of people with German citizenship was 87.8% of the total population in 2018, with differences between the states ranging from 95.5% in Mecklenburg-Western Pomerania and 81.5% in Berlin. The largest religious groups in Germany are Catholic and Protestant Christians.

1.2 Economic context

Germany is a member of the G7 group of leading industrial nations and has the largest national economy in the EU by GDP. In 2018 Germany's GDP amounted to more than € 3.3 trillion, or approximately € 40 329 per capita (Table 1.2). The German economy grew by more than 2% annually between 2014 and 2018.

Total public expenditure as a percentage of GDP has decreased since the mid-1990s from 54.7% in 1995 to 44.6% in 2018 (the EU average

was 45.7% over this period). Some of the reasons for this trend include reductions in the number of public sector employees and in social security benefits. The temporary increase after 2008 can be explained by the massive use of government funds to limit the global financial and economic crisis (e.g. stimulus programmes, rescue packages for banks), while GDP was declining at the same time. Since 2011 the ratio has remained largely constant at around 44%.

Trends in the unemployment rate are important for the health sector as they have an impact on the revenue of Germany's statutory insurance schemes (see Section 3.3.2 Collection). During the 2000s the unemployment rate in Germany was above the EU and OECD averages. The sharpest increase in the number of unemployed was in 2005, when it rose by 10.9%, or almost 480 000 people over the previous year, to reach 4.86 million. The main reason for this development was the pooling of social benefits for the long-term unemployed, which resulted in statistical changes in the number of those registered as unemployed and in the way the labour supply is calculated. According to calculations by the Federal Employment Agency, this so-called "Hartz IV effect"* accounted for 380 000 of the additional unemployed people in 2005. Robust economic development and high labour force demand mean that unemployment in Germany has declined continuously since the economic crisis in 2009 and was at 3.4% in 2018. Table 1.2 shows the most important macroeconomic indicators for Germany between 1995 and 2018.

Germany is one of the wealthiest countries in the world and has a comparably well-developed social security system. At the same time, however, there are considerable inequalities in terms of living conditions and opportunities for social participation. This is shown, among other things, by the unequal distribution of income and wealth, the poor prospects of low-skilled people in the labour market, the expansion of precarious employment conditions and the persisting association between social origin and educational opportunities (Bundesministerium für Arbeit und Soziales (BMAS), 2017a).

---

* The "Hartz Plan" is the term used to describe the labour market reforms implemented early during the first decade of the 21st century, and is named after Peter Hartz, a former human resources manager at Volkswagen who headed the committee entrusted with developing the reforms. "Hartz IV", in turn, is the colloquial expression used to refer to the Fourth Law for Labour Market Services, which defines the basic welfare benefits of individuals who are capable of work but are currently unemployed and are not (or no longer) receiving benefits from statutory unemployment insurance.

The share of people at risk of poverty has decreased slightly since 2015 and is lower than the EU average (18.7% compared to 21.9%). Nevertheless, in light of the increasing Gini coefficient since 2000, inequality of income distribution has tended to grow in Germany over the last two decades (Table 1.2).

TABLE 1.2 Macroeconomic indicators for Germany, 1995–2018 or latest year available

	1995	2000	2005	2010	2015	2018
GDP per capita (current €)[a]	23 198	25 654	27 747	31 358	37 904	40 329
GDP per capita (US$, PPP)[a]	23 528	27 202	31 794	38 949	47 683	53 074
GDP annual growth rate/ Real GDP growth in %[a]	1.53	2.90	0.72	4.18	1.74	1.53
Public expenditure (Government expenditure as % of GDP)	54.7	44.7	46.2	48.1	44.0	44.6
Government deficit/ surplus (as % of GDP)	-9.4	0.9	-3.4	-4.2	0.8	1.7
General government gross debt (% of GDP)	54.8	58.9	67.0	81.8	71.6	60.9
Unemployment, total (% of labour force)	8.2	7.9	11.2	7.0	4.6	3.4
People at risk of poverty or social exclusion, total (% of total population)	-	-	18.4	19.7	20.0	18.7
Income inequality (Gini coefficient of disposable income)	29.0	25.0	26.1	29.3	30.1	31.1

Sources: Eurostat, 2020a,[a]World Bank Group, 2020

1.3 Political context

Germany is a federal parliamentary republic, consisting of 16 states (Figure 1.1). Each state has a constitution that is consistent with the federal, democratic and social principles embodied in the national constitution, which is known as the Basic Law, or *Grundgesetz*.

The constitutionally defined legislative bodies are (a) the *Bundestag* ("Federal Assembly") and (b) the *Bundesrat* ("Federal Council"):

a. The members of the *Bundestag* are elected by the people every four years.* The current members of parliament in the Federal Assembly were last elected in September 2017 and form six political parties, namely the Christian Democratic Union/Christian Social Union (*Christlich Demokratische Union/Christlich-Soziale Union – CDU/CSU*) holding 246 seats, the Social Democratic Party (*Sozialdemokratische Partei Deutschlands – SPD*) holding 152 seats, the Alternative for Germany (*Alternative für Deutschland – AfD*) holding 90 seats, the Free Democratic Party (*Freie Demokratische Partei – FDP*) holding 80 seats, the Left Party (*Die Linke*) holding 69 seats, and Alliance 90/The Greens (*Bündnis 90/Die Grünen*) holding 67 seats. The main functions of the Bundestag are to pass laws, elect the chancellor and hold the government accountable (Deutscher Bundestag, 2019).
b. The *Bundesrat*, which represents the sixteen states, does not consist of directly elected representatives, but rather of representatives from each of the sixteen state governments, each having between three and six of a total of 69 votes. The main function of the Bundesrat is to deliberate and enact laws passed by the Bundestag.

The president of Germany (since February 2017 Frank-Walter Steinmeier) is elected for five years by an assembly consisting of the members of the Bundestag and an equal number of representatives from the states according to the size of their population. The president's role is largely ceremonial, the chief tasks being to sign new laws, to formally appoint the chancellor and the federal ministers and to serve as head of state.

Legislative authority is exercised by the 16 states except in areas reserved explicitly for the federal level. At the federal level, legislative authority falls into two different categories: (1) exclusive legislation (pertaining mainly to foreign policy, defence, currency, citizenship, trade, aviation and some elements of taxation) and (2) concurrent legislation. For areas that fall neither within the exclusive remit of the federal government nor within that of the states (for example, criminal law, road traffic laws and consumer protection),

* The Federal Assembly is made up of at least 598 members. Under certain circumstances related to the system of mixed-member proportional representation, some candidates may win so-called overhang seats, which – together with compensatory seats – increase the overall number of seats in the Bundestag.

the states may exercise legislative authority only in cases where the federal government has not already done so. In principle, the states can fill in any gaps left by federal legislation or in areas not specified by the Basic Law. As an expression of their cultural sovereignty, they are responsible for almost all matters pertaining to culture and education (see Section 4.2.4 Training of health workers). Given this shared power, health care policy and legislation are formulated at both the federal and state level.

The government's cabinet consists of the chancellor (since 2005, Angela Merkel), who is head of government, and the federal ministers. The chancellor chooses the number of ministers and their responsibilities and proposes them to the president for appointment or dismissal. The strong position enjoyed by the chancellor is due primarily to their authority to establish the guidelines for government policy; the federal ministers run their ministries independently but within the scope of these guidelines.

Germany joined the North Atlantic Treaty Organization (NATO) in 1955, the United Nations (UN) in 1973 and the World Trade Organization (WTO) in 1995. Germany is a founding member of the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD).

1.4 Health status

Life expectancy at birth in Germany has increased by 2.7 years since 2000 and reached 81.0 years in 2018 (Table 1.3). Although life expectancy is slightly above the EU average of 80.9 years, it has increased more slowly than in most other EU countries since 2000 and is lower than in all other western European countries (OECD/European Observatory on Health Systems and Policies, 2019). As in other countries there is a gender gap in life expectancy and women born in 2018 are expected to live on average 4.7 years longer than men. The gender gap in life expectancy has narrowed by 1.4 years since 2000. Life expectancy after the age of 65 increased from 15.8 to 18.0 years for men and from 19.6 to 21.1 years for women between 2000 and 2018, i.e. the gender gap has narrowed in the elderly as well (Table 1.3).

After German reunification in 1990, there were considerable differences in life expectancy between the eastern and western states. Differences in

life expectancy in Germany no longer follow a strict east-west divide; however, regional differences do exist. The lowest life expectancy for women in 2016/18, for example, is in the state of Saarland, in the western part of the country. There, women have a life expectancy at birth that is 2 years below that seen in Baden-Wurttemberg (which is also in western Germany), the state with the highest female life expectancy during the reference period. This being said, the biggest contrast in male life expectancy is the 3.4 year gap seen between the eastern state of Saxony-Anhalt (lowest) and the south-western state of Baden-Wurttemberg (highest) (Statistisches Bundesamt 2020b).

TABLE 1.3 Mortality and health indicators, 1990–2018 (selected years)

LIFE EXPECTANCY (YEARS)	1995	2000	2005	2010	2015	2018
Life expectancy at birth, total	76.7	78.3	79.4	80.5	80.7	81.0
Life expectancy at birth, male	73.3	75.1	76.7	78.0	78.3	78.6
Life expectancy at birth, female	79.9	81.2	82.0	83.0	83.1	83.3
Life expectancy at 65 years, male	14.8	15.8	16.9	17.8	17.9	18.0
Life expectancy at 65 years, female	18.7	19.6	20.1	20.9	21.0	21.1
MORTALITY (SDR PER 100 000 POPULATION)	**1995**	**2000**	**2005**	**2010**	**2015**	**2018**
All causes	1 359.5	1 212.7	1 133.4	1 033.1	1 057.2	1 031.2*
Circulatory diseases	682.2	589.0	520.6	429.0	412.8	383.6*
Malignant neoplasm	316.3	293.8	272.7	258.3	252.1	248.0*
Respiratory system	85.3	76.7	80.4	72.8	77.2	75.2*
Alzheimer's and other dementias	-	-	-	29.3	51.2	51.6*
Digestive system	61.3	56.6	56.7	50.9	45.2	45.3*
Communicable diseases	11.6	14.2	16.0	18.5	22.5	18.8*
External causes of death	53.1	45.2	42.4	39.9	42.7	44.0*
Infant mortality rate (per 1000 live births)	5.3	4.4	3.9	3.4	3.3	3.3*
Maternal mortality rate (per 100 000 live births)[a]	5.4	5.6	4.1	5.5	4.1**	-

Sources: Eurostat, 2020a, [a]World Health Organization Regional Office for Europe, 2020

Notes: SDR = standardized death rate; * data refer to the year 2017; ** data refer to the year 2014

Socioeconomic status affects life expectancy. According to data from the Socio-Economic Panel (SOEP) from 1992 to 2016, 13% of women and 27% of men from the lowest income group die before they turn 65 while in the highest income group this applies only to 8% of women and 14% of men. Based on the mean life expectancy at birth, the difference between the lowest and highest income groups is 4.4 years for women and 8.6 years for men. When looking at life expectancy after the age of 65, there are also significant differences between income groups. For women, the range is 3.7 years between the lowest and highest income groups, and 6.6 years for men (Lampert et al., 2019).

Table 1.3 shows that the total mortality rate in Germany has been steadily declining since 2000. This positive development is also reflected in the increases seen in life expectancy at birth. According to Eurostat data, the standardized death rate (SDR) for all causes of death was higher than the EU average in 2016 (1017 in Germany compared to 998 per 100 000 population across the EU), with the relative difference being smaller for younger people compared to older ones, and for men compared to women. The two most common causes of death by far in Germany in 2017 were diseases of the circulatory system (accounting for 37% of all deaths) and malignant neoplasms (cancers) (24%), followed by diseases of the respiratory system (7%), Alzheimer's and other dementias (5%), and diseases of the digestive system (4%).

Diseases of the circulatory system have decreased sharply since 2000, mostly attributable to the decline in mortality caused by ischaemic heart disease. In 2000 there were 248 deaths per 100 000 population due to ischaemic heart diseases with a considerably higher mortality rate among males (SDR 334 per 100 000 population) than among females (SDR 195 per 100 000 population). While this mortality rate decreased by 44% for both genders (to 139 per 100 000 population), 40% for men (to 199 per 100 000 population) and 50% for women (to 98 per 100 000 population) up to 2017, it is still considerably higher than the EU average (162 males and 86 females per 100 000 population).

Mortality due to malignant neoplasms also decreased over this period, particularly with regard to cervical and breast cancer. Lung cancer is the most frequent cause of cancer deaths, accounting for 20% of all cancer deaths. While lung cancer mortality has decreased in men by 9% since 2009, this indicator has increased in woman by 20%, mainly due to changes in smoking habits (see below). Diseases of the respiratory system are the third leading cause of death. While the mortality rate is considerably higher in males

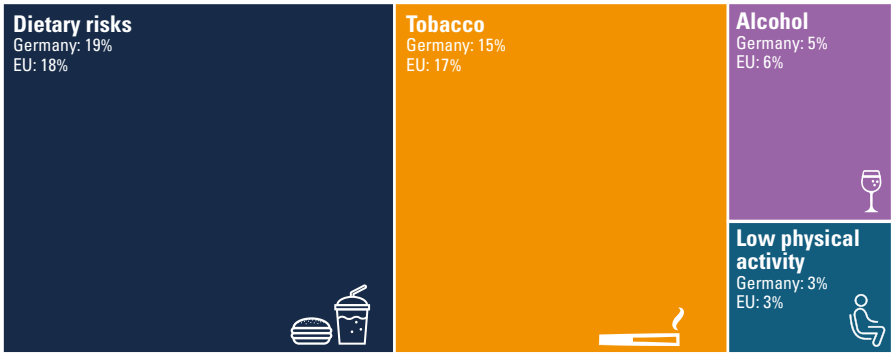
(100 per 100 000 population) than females (54 per 100 000 population), it is lower than the EU average as a whole and for both genders.

Strikingly, an increase of 76% can be observed in the age-standardized death rates for Alzheimer's and other dementias for both genders since 2010. However, this rise reflects both the ageing German population and improved identification and recording of these diseases as causes of death.

Health-related lifestyles and health behaviour have a strong influence on the morbidity and mortality of the German population. About 40% of deaths in Germany result from behavioural risk factors. Almost one-fifth of all deaths in 2017 can be attributed to dietary risks, namely obesity. Tobacco smoking (including direct and second-hand smoking) accounts for about 15% of deaths in Germany. About 5% of deaths result from alcohol consumption, and 3% of deaths from low physical activity (Figure 1.2).

According to data estimates from the European Health Interview Survey (EHIS), 16.7% of men and 16.1% of women aged over 15 reported being obese in 2014, which is close to the EU average. One reason for being overweight and obese is dietary habits. In Germany fewer people on average eat fruit or vegetables every day (55.6% of women and 38.7% of men) than in the EU (61.5% of women and 49.4% of men). In terms of physical activity, overall Germany performs the same as the EU average but as a positive trend, the share of weekly physically active people in older age groups is higher than the EU average (Institute for Health Metrics and Evaluation (IHME), 2017, 2018).

FIGURE 1.2 Risk factors affecting health status, latest available year



Sources: OECD/European Observatory on Health Systems and Policies, 2019

Notes: The overall number of deaths related to these risk factors (364 000) is lower than the sum of each one taken individually (402 000) because the same death can be attributed to more than one risk factor. Dietary risks include 14 components such as low fruit and vegetable consumption and high sugar-sweetened beverage consumption.

Smoking rates have decreased among adults and adolescents over the past decade and are close to the EU average. In 2014, 20.8% of women and 27.0% of men smoked at least occasionally, with a higher rate in younger age groups for both sexes. Similar to smoking habits, alcohol consumption is quite high in Germany. In 2016 the alcohol consumption rate was 10.9 litres per capita, considerably higher than in neighbouring countries such as the Netherlands (8.2 litres) and Denmark (9.4 litres), but lower than in Austria (11.8 litres) and the Czech Republic (11.7 litres) (OECD, 2019). In terms of heavy episodic drinking (or binge drinking), the share of Germans who drink six or more alcoholic drinks on one occasion at least once a month is considerably higher than the EU average for both males (42.1% vs. 28.0%) and females (24.3% vs. 12.2%) (Lange & Finger, 2017). As in most other EU countries many behavioural risk factors in Germany are more common among people with lower education or income. This is the case for all reported indicators.

2

Organization and governance

- Germany was the first country to introduce a system of social health insurance during the chancellorship of Otto von Bismarck in 1883. Continuous development and countless reforms have taken place since then, but the guiding principles of the initial legislation, such as the strong solidarity principle, are still intact.
- Health system governance is decentralized and divided between the federal and state level, as well as corporatist bodies of self-governance. While the federal level sets the overall legal framework, state governments are responsible for hospital planning and public health services. However, most decision-making power within the SHI system is delegated to corporatist bodies. These corporatist bodies are "legitimized civil society organizations"*, such as associations of sickness funds and providers, which meet in the Federal Joint Committee to set out regulations in detail.
- A unique feature in the German health system is the coexistence of SHI and substitutive PHI, which together provide de facto universal health coverage. Only a small part of the population, based on their income, can actually choose to have coverage either through SHI or through substitutive PHI. Statutory health insurance is a multi-payer system consisting of 105 sickness funds that cover

* In Germany, this term refers to actors/stakeholders which enjoy democratic legitimacy or are deemed to be "lawful" within the system of self-governance/corporatism.

87% of the population, while another 11% is insured in one of 42 private health insurance companies.

- Those insured under SHI can freely choose between sickness funds and those insured under PHI are free to choose their private health insurers. Patients are helped by a multitude of available information and guiding organizations but face challenges in navigating through this information and assessing its quality.
- Benefits covered by SHI are legally defined in generic terms, while details and decisions on including new technologies, pharmaceuticals or medical devices in the benefits basket are at the discretion of the Federal Joint Committee. These decisions are guided by structured Health Technology Assessments and are binding for all sickness funds, providers and patients.
- Due to separate legislation, planning and regulation for ambulatory, inpatient and long-term care, as well as public health, service provision is fragmented. Therefore, coordination across sectors (and the three levels of governance), quality assurance and a lack of integrated health information are persistent concerns in German health policy.

2.1 Historical background

Germany is widely regarded as the first country to have introduced a national system of social and health insurance. A mandatory health insurance requirement was introduced at the national level in 1883 during the chancellorship of Otto von Bismarck and was expanded over the following century to the areas of occupational accidents and disease (1884), old age and disability (1889), unemployment (1927) and long-term care (1994). Despite a series of historical breaks, the guiding principles of the "Bismarckian" system have remained until today: solidarity among the insured (e.g. non-risk related contributions and entitlement to benefits according to need); mandatory membership and shared payment of contributions between employer and employee; and a strong reliance on self-government (Busse et al., 2017a). The development of the German health care system is best described following the main strands of the country's political history (Table 2.1).

TABLE 2.1 Main phases of the health system's development

1871–1918 GERMAN EMPIRE AND FIRST WORLD WAR	**EXTENSION OF POPULATION AND BENEFIT COVERAGE**	
	1881:	Kaiser Wilhelm I's Royal Proclamation on Social Policy
	1883:	Establishment of SHI by Bismarck's Health Insurance Act, covering initially 10% of population
	1911:	Health, pension and accident insurance became integrated into the Imperial Insurance Code (in force from 1914)
	1913:	Berlin Convention on Ambulatory Care, the first step towards joint self-governance in SHI system
	1913:	35% of population are covered by SHI
1919–1933 WEIMAR REPUBLIC	**STRENGTHENING OF MEDICAL PROFESSION**	
	1923:	Imperial Committee of Physicians and Sickness Funds
	1925:	Majority of population (51%) is covered by SHI
	1931–1933:	Special presidential directives on ambulatory care; create Regional Associations of SHI Physicians and a "total payment" for ambulatory care
1933–1945 NAZI REGIME AND SECOND WORLD WAR	**FUNDAMENTAL STRUCTURES OF SHI REMAINED, *BUT***	
	1933:	Withdrawal of self-administration and exclusion of socialist and Jewish workers from the committees of the sickness funds
	1933–1938:	Work prohibition for Jewish physicians; denied access to health care for Jews and other minorities
	1934:	Regional Associations of SHI Physicians are merged into one National Association of SHI Physicians
	1934–1935:	Redefining organizational framework along the rules of Nazi-dictatorship: centralization of sickness funds, welfare organizations, and community health services by the Nazi Party
	1941:	SHI coverage for retired persons
1945–1989 GERMAN SEPARATION	**WEST** CONTINUATION OF SHI SYSTEM IN THE FEDERAL REPUBLIC OF GERMANY	**EAST** STRONG FOCUS ON PUBLIC HEALTH IN THE GERMAN DEMOCRATIC REPUBLIC
	1955: Restoration of self-administration of sickness funds (after a long and fierce debate)	**1945:** Establishment of the Central administration for the East German health care system
	1960–1964: Failed reform acts	**1950:** Central Planning Act – introduction of universal health coverage, managed by two national social insurance agencies
	1972: Hospital Care Financing Act	**1974:** Introduction of Disease Management Programmes
	1972/1975/1981: SHI coverage for farmers, students, disabled and artists	**1989:** Only a few weeks before the fall of the Berlin wall, a National Health Conference decided to implement substantial health care reforms with increased investment
	1977: First Cost Containment Act	
	1988: Health Care Reform Act	
1989–TODAY GERMAN RE-UNIFICATION	**TRANSFER OF THE FRG HEALTH CARE SYSTEM TO THE EASTERN PART OF GERMANY**	
	1989:	Transformation of the Imperial Insurance Code of 1914 into the Code of Social Law (Sozialgesetzbuch – SGB), divided into books; the fifth book (SGB V) covers SHI
	1990:	Re-unification Acts
	1993–2020:	see Section 6 *Principal Health Reforms*

Source: Busse et al., 2017a

GERMAN EMPIRE AND FIRST WORLD WAR (1871–1918)

The Health Insurance Act introduced a mandatory health insurance requirement along occupational lines and initially only for industrial workers, skilled-craftsmen and blue-collar workers in 1883. Bismarck's mandatory insurance built on traditions and already existing structures, broadening them (e.g. industrial workers' mutual-aid organizations, company-based mutual aid schemes), creating a patchwork of sickness funds throughout the German empire. In 1885, 10% of the population was insured within a total of 18 776 sickness funds (Alber, 1992).

In the beginning the key principle of self-governance applied only to the sickness funds. Employees subject to the mandatory insurance requirement paid two thirds of the health insurance contributions, whereas employers paid one third. At the same time, both employers and employees appointed representatives to each sickness fund's administrative board proportionate to the 2:1 employer–employee contributions ratio. The administrative board set the contribution rate, defined optional benefits and addressed other issues related to sickness fund by-laws. Indeed, the Health Insurance Act addressed neither the relationship between the sickness funds and ambulatory care physicians, nor the qualifications of health care professionals, leaving both matters to the discretion of the sickness funds.

The expansion of coverage to white-collar workers in 1901 and the shift to more in-kind benefits corresponded with a higher demand for health care services and a growth in the number of health care professionals, which resulted in a conflict over power and income between physicians and sickness funds. Physicians demanded unrestricted access to patients covered by SHI and a limited role for the sickness funds, and began to push for greater autonomy and higher income through lobbying and strikes.

The 1911 Imperial Insurance Code introduced a common legal framework for the different pillars of the social security system. The sections covering health insurance remained in force, with some modifications, until 1988. In 1989 health insurance regulations were transferred to the Social Code (V). However, the Imperial Insurance Code was passed without addressing any of the physicians' demands. Physicians threatened to go on strike shortly before the law was to take effect in 1914. In December 1913 the government intervened for the first time in the conflict: the resulting Berlin Convention stipulated that representatives of the physicians and sickness funds were

to form joint commissions, thus channelling the conflict into constructive negotiations and introducing the beginnings of today's system of joint self-government within the SHI scheme.

WEIMAR REPUBLIC (1919–1933)

By 1925, 51% of the population was already insured with 7777 sickness funds, and health expenditures had tripled since 1885. This growth was also due to the extension of coverage to non-working dependents, first on a voluntary basis by sickness funds and in 1930 by legal mandate. Initially, the benefits basket was limited and expenditure on benefits in-kind rather small while cash benefits in the case of illness, death and childbirth dominated health expenditure. Both the scope and scale of the benefits basket were expanded incrementally (and were reduced for the first time only in 1977).

In 1931 office-based physicians were granted a monopoly over outpatient care and were required to hold membership of their respective Regional Association of Statutory Health Insurance Physicians, which was charged with negotiating collective contracts with the sickness funds. This concession to physicians disconnected ambulatory care from both population-based and public health institutions and from hospitals that had to limit their scope of work to inpatient services. The result was a fragmented provision of care, a situation that endures to this day.

NAZI REGIME AND SECOND WORLD WAR (1933–1945)

During the Nazi dictatorship the fundamental structures of the health system remained unchanged. SHI coverage was extended to pensioners in 1941, and sickness funds were legally obliged to provide coverage for hospital care not only to members but also to their dependents in 1936 (Alber, 1992). Despite this structural continuity, the principles of the social insurance system were grossly violated. Access to health care was restricted or denied for the Jewish population and other stigmatized minorities and legislation prohibited Jewish physicians from treating patients and finally banned them from practising medicine altogether. The organization of the health system and the balance of power among sickness funds and professional associations were centralized

and submitted to a director nominated by the Nazi party. Members of the corporatist institutions within the system of joint self-government were chosen by the Nazi party rather than being elected, and the participation of employers and employees was limited to service on an advisory council (Busse et al., 2017a).

GERMAN SEPARATION (1945–1989)

The self-governance structure was largely restored in 1955 with only slight modifications in West Germany. For instance, SHI contributions are now equally shared between employee and employer (compared to a ratio of 2:1 since 1883). Cost-containment was at the core of a series of health reforms, but not at the expense of a continued extension of coverage: by 1960, 83% of the population was insured with 2028 sickness funds. Furthermore, states were made responsible for capital investment in hospitals while sickness funds covered operating costs, which led to a phase of infrastructural investment. In East Germany a central administration was established in 1945. Although the Central Planning Act of 1950 put the system under central state control, not all health care institutions in East Germany were formally nationalized and the principle of social insurance – with employers and employees sharing the cost of insurance contributions – was maintained *de jure*. Insurance was made universal, and administration was concentrated into just two large sickness funds, one for workers (89%) and one for other occupational groups, members of agricultural cooperatives, artists and the self-employed (11%) (Knieps & Reiners, 2015; Lüschen et al., 1997).

GERMAN RE-UNIFICATION (SINCE 1990)

Shortly after German re-unification, the West German SHI was transferred to the eastern part of the country with only a few compromises in terms of delivery of care. The challenges derived from the re-unification accelerated the speed of health reforms, although increased competition, quality assurance and cost-containment were commonly at their core. Competition was inherent to the SHI system through the free choice of providers, but competition among payers was lacking because people were mostly assigned

to a particular sickness fund. Starting from 1996, insured individuals were granted the right to choose and change their sickness funds. At the same time, pro-competition regulations were buffered by measures to avoid adverse effects on equity and quality (e.g. the introduction of a risk-adjustment scheme and a uniform contribution rate). The gradual expansion of population coverage and enlarging the benefits basket, however, were untouched by the reforms: coverage with either substitutive PHI or SHI has been mandatory since 2009.

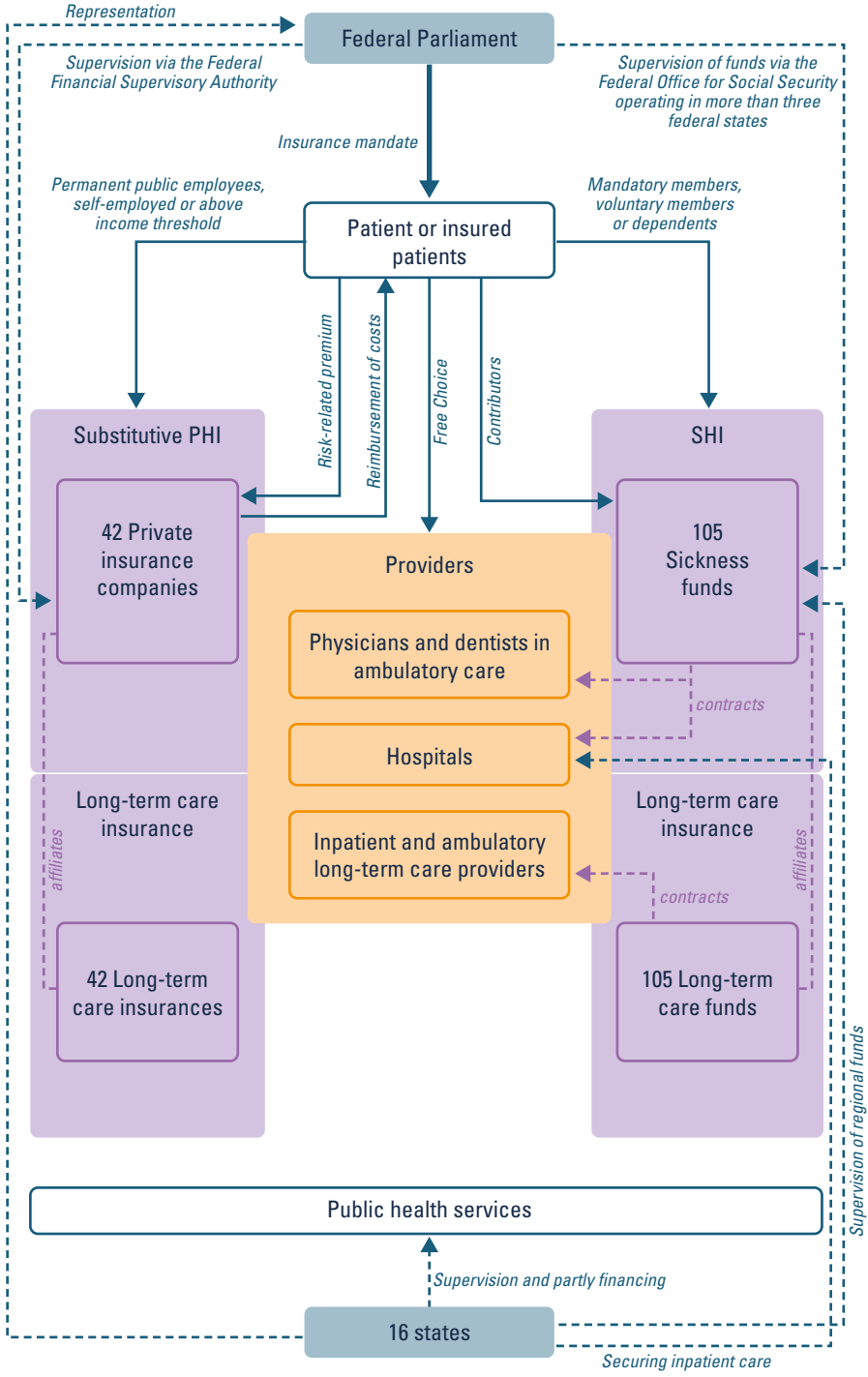
For a more detailed account of the background, political objectives and/or specific health reforms see Busse & Blümel (2014) and Busse et al. (2017b). Health reforms from 2012 to early 2020 will be described in Chapter 6.

2.2 Organization

The German health system and its governance is highly complex. It is the only country in Europe with coexisting SHI and substitutive PHI. Both schemes are separated along different organizational, regulative and financial lines (Figure 2.1). Care sectors are also separated in terms of organization, governance and financing. Due to separate legislation for individual sectors within public health, ambulatory and inpatient care, as well as in long-term care, there is strong fragmentation of service provision (Figures 2.1 and 2.2).

Health insurance is compulsory for all citizens and permanent residents, with SHI constituting the main source of financing health care. The multi-payer SHI insurance scheme covered 72.8 million people or 87.7% of the population in 2018. Employees above an opt-out threshold of income, € 62 550 in 2020, and certain professional groups, e.g. self-employed or civil servants, can opt to enroll in substitutive PHI. Thus, 8.7 million people (or 10.5% of the population) were covered by substitutive PHI (Bundesministerium für Gesundheit (BMG), 2019d; Statistisches Bundesamt, 2019b; Verband der privaten Krankenversicherung, 2019a) (see Section 3.3.1 Coverage for more detail). Another unique feature of the German health care system is that the vast majority of providers serve both insured populations. The few exemptions that are accessible only to those insured under substitutive PHI represent less than 1% of total hospitals in 2018 (Statistisches Bundesamt, 2020g).

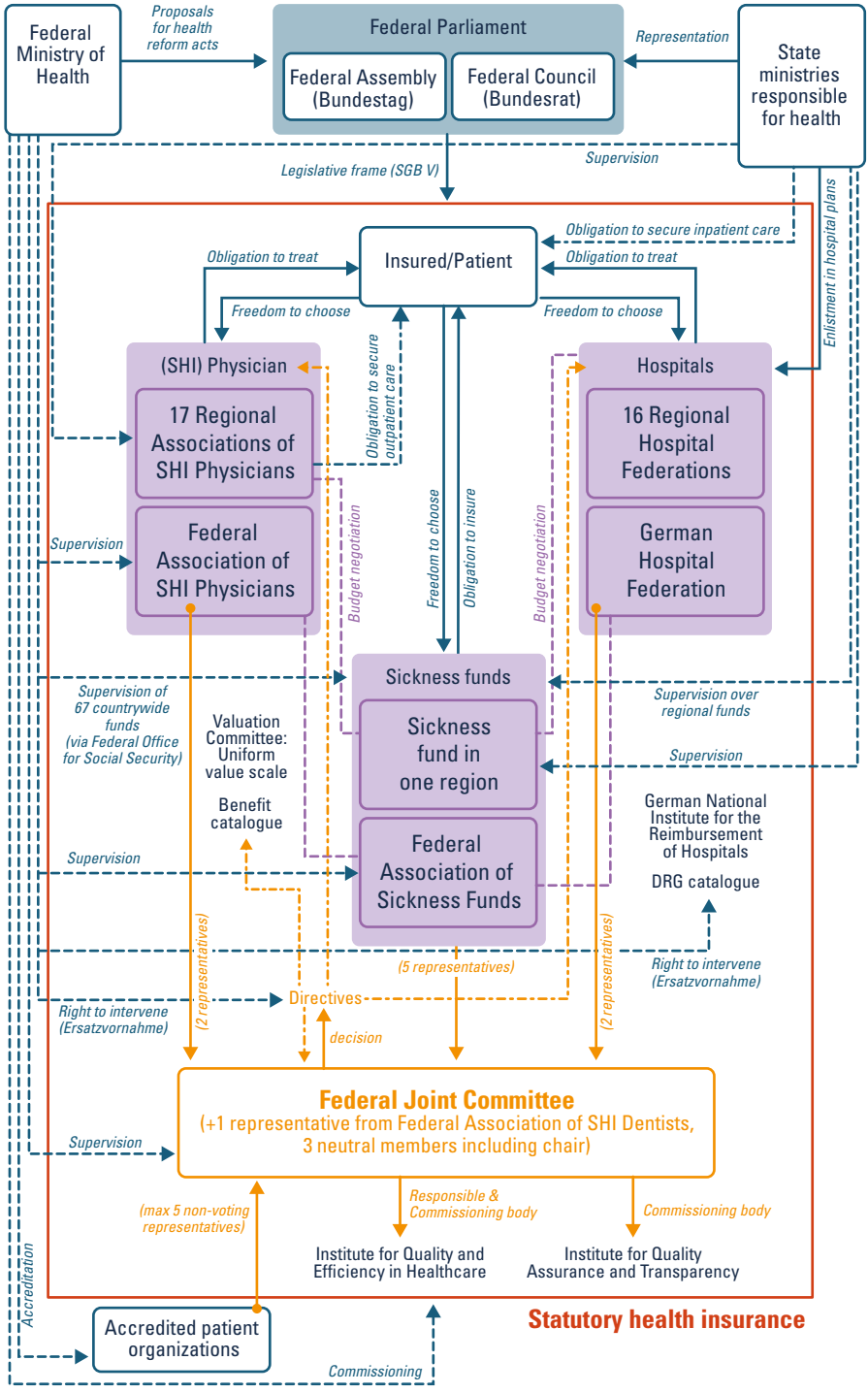
FIGURE 2.1 Organizational relationship between statutory and private health care service, as well as long-term care, 2020



Sources: GKV-Spitzenverband, 2020b; Verband der privaten Krankenversicherung, 2019a

Notes: Based on Busse & Blümel, 2014; PHI: private health insurance; SHI: statutory health insurance

FIGURE 2.2 Overview of the statutory health insurance system, 2020



Source: Authors' own compilation based on Busse & Riesberg, 2005.

Notes: Solid lines mean representation either through a contractual relationship or interaction; dashed lines mean supervision or regulation

Historically, financing and delivering health care in the SHI scheme have been the main focus of reforms and are characterized by shared decision-making powers between the federal government and the 16 state governments, along with legitimized civil society organizations or "corporatist bodies". These corporatist bodies – mainly membership-based, self-regulated organizations of payers and providers (Figure 2.2) – play an important role in the system of self-governance in SHI: tasks are delegated by the federal level to these corporatist bodies that operate the financing and delivery of benefits covered by SHI.

In joint committees of payers (associations of sickness funds) and providers (associations of SHI physicians or dentists and hospital federations), legitimized actors have the duty and right to define benefits, prices and standards. Corporatist actors representing payers and providers negotiate horizontal contracts and manage their members. The vertical implementation of decisions is combined with strong horizontal decision-making and contracting among the legitimated actors involved in the various sectors of care.

Beyond the established decision-making corporatist organizations, other organizations have been given formal rights to contribute to the activities of decision-making bodies through consultation (e.g. nurses and allied health professions), participation and proposals (patient organizations) or becoming a deciding and financing partner (PHI for case payments in hospitals).

The wide range of actors who are involved in the organization of the German health care system is best described according to the separation of powers between the federal, state and corporatist levels.

2.2.1 *Federal level*

The constitutionally defined legislative bodies, the Bundestag ("Federal Assembly") and Bundesrat ("Federal Council"), are described in more detail in Section 1.3 Political context.

FEDERAL MINISTRY OF HEALTH

The Federal Ministry of Health (*Bundesministerium für Gesundheit – BMG*) is responsible for proposing and coordinating legislation for the statutory health

and long-term care insurance schemes. It is also responsible for prevention, health promotion, patient rights, the registration, pharmacovigilance and distribution of pharmaceuticals and medical devices, registration of health professionals and coordinating international health politics. Additionally, the Federal Ministry of Health is responsible for the supervision of the main corporatist bodies at the federal level, such as the Federal Joint Committee and the Federal Association of SHI Physicians.

The Drug Commissioner of the Federal Government (*Beauftragte(r) der Bundesregierung für Drogenfragen*), the Patients' Commissioner of the Federal Government (*Beauftragte(r) der Bundesregierung für die Belange der Patientinnen und Patienten*) and the Federal Commissioner for Long-Term Care (*Bevollmächtigte(r) der Bundesregierung für Pflege*) are assigned to the Federal Ministry of Health. The Federal Ministry of Health is advised by a range of ad hoc committees, as well as by the Advisory Council to Assess Developments in Health Care (*Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen – SVR*).

To perform its multitude of licensing and supervisory functions, the Federal Ministry of Health is assisted by five subordinate agencies (not shown in Figure 2.2).

- **The Robert Koch-Institute** (*Federal Institute for Infectious and Non-Communicable Diseases – RKI*) is responsible for the surveillance, detection, prevention and control of (communicable) diseases, such as the COVID-19 pandemic. It is the key authority in analysing and compiling disease-specific information in Germany and is responsible for e.g. the national cancer registry as well as monitoring overall population health.
- **The Federal Institute for Pharmaceuticals and Medical Devices** (*Bundesinstitut für Arzneimittel und Medizinprodukte – BfArM*) authorizes pharmaceuticals, and is responsible for the surveillance and monitoring of pharmaceuticals and medical devices. Since 2019 the BfArM has also been tasked with assessing mobile health applications for their possible listing in the directory of reimbursable services. In 2020 the **German Institute for Medical Documentation and Information** (*Deutsches Institut für Medizinische Dokumentation und Information – DIMDI)* joined with the BfArM: this entity is now also responsible for updating and operating several databases

covering pharmaceuticals and pharmacies, medical devices and clinical trials involving patient databases in many other fields in medicine and health care. It publishes the German versions of classification systems such as the International Classification of Diseases (ICD-10-GM and from 2022 onwards ICD-11), the International Classification of Functioning, Disability and Health (ICF) and the German Procedure Classification (*Operationen- und Prozedurenschlüssel*).

- **The Paul-Ehrlich-Institute** (*Federal Institute for Vaccines and Biomedicines – PEI*) is responsible for licensing vaccines, sera for e.g. cancer treatment, advanced therapy medicinal products and other biomedicines, as well as advising on the development of new pharmaceuticals and registering clinical trials in its area of responsibility.
- **The Federal Centre for Health Education** (*Bundeszentrale für gesundheitliche Aufklärung – BZgA*) is the key authority for health promotion and disease prevention through campaigns to raise awareness (e.g. sexually transmitted diseases, organ transplantation) and health education.

Other federal institutions relevant to the health care system are the Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht – BaFin*), which is responsible for the supervision of private insurers, and the Federal Office for Social Security (*Bundesamt für Soziale Sicherung – BAS*), which oversees the legality of decisions taken by the quasi-public corporations that administer the various statutory insurance schemes. It is also responsible for managing the Central Reallocation Pool, the risk-adjustment scheme (for both see Section 3.3.3 Pooling and allocation of funds) and the accreditation of Disease Management Programmes (see Section 5.3 Primary care).

Traditionally, there are several parallel coverage schemes (*Freie Heilfürsorge*) for civil servants or employees with higher health risks due to their employment (e.g. police, fire fighters and members of the military); the Federal Ministry of Defence or the State Ministries of the Interior administer these parallel schemes (not shown in Figure 2.2).

2.2.2 *State level*

The 16 state governments deal with a variety of tasks related to health care such as planning inpatient care capacities, planning and providing public health services, and supervising the regional associations of sickness funds as well as outpatient care providers. As a voluntary platform to coordinate regional health legislation, the Conference of Health Ministers (*Gesundheitsministerkonferenz*) is the most visible forum for state governments to build consensus and coalitions. It also provides a network of working groups on e.g. emergency care across state governments (Gesundheitsministerkonferenz, 2018a).

2.2.3 *Corporatist level/Self-governing bodies*

FEDERAL JOINT COMMITTEE

The paramount decision-making body within the system of joint self-governance is the Federal Joint Committee (Figure 2.2). Decisions are taken in a plenum made up of 13 appointed members for a six-year period. Several subcommittees of the Federal Joint Committee (nine in 2020) do the preparatory work for the plenum's decision-making but external experts can also be part of their consultations. The Federal Joint Committee also compiles the evidence base necessary for decisions and is supported by:

- **The Institute for Quality and Efficiency in Healthcare** *(Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen – IQWiG)* examines the benefits and harms of medical interventions (e.g. pharmaceuticals) for patients. It provides information about the advantages and disadvantages of examination and treatment methods in the form of scientific reports (especially for the Federal Joint Committee) and easily understandable health information for the general public.
- **The Institute for Quality Assurance and Transparency in Healthcare** (*Institut für Qualitätssicherung und Transparenz im Gesundheitswesen – IQTIG*) is responsible for developing tools and indicators to secure quality across hospital and outpatient care.

PAYERS

The 105 sickness funds (as of January 2020) act as main payer institutions in the SHI system and are represented at the federal level by the Federal Association of Sickness Funds (*GKV-Spitzenverband*) (GKV-Spitzenverband, 2020b). The federal association is responsible for those SHI tasks which are relevant for all sickness funds and their insured – such as collective negotiations on contract conditions, payment schemes in hospital and outpatient care, and defining the level of reimbursement of pharmaceuticals. There has been a shift towards a higher concentration of SHI insured over time, partly through mergers, with the three biggest sickness funds accounting for more than a third of the total SHI insured population in December 2019: the *Techniker Krankenkasse* with 10.6 million insured, followed by the *Barmer GEK* (9.0 million), and the *Deutsche Angestellten Krankenkasse* (5.7 million) (BARMER, 2020; Deutsche Angestellten Krankenkasse (DAK), 2020; Techniker Krankenkasse, 2020).

CORPORATIST INSTITUTIONS IN OTHER STATUTORY INSURANCE SCHEMES

There is a similar administrative structure for quasi-public corporatist institutions in the other statutory insurance schemes resembling sickness funds:

- The long-term care funds (*Pflegekassen*), which administer the statutory long-term care insurance scheme, are quasi-public corporations in their own right, but in terms of organization are formed by, and are directly affiliated with, sickness funds (see Section 5.8 Long-Term Care).
- Workers' compensation funds (for the private sector) and accident funds (*Unfallkassen*, for the public sector) administer the statutory insurance scheme for occupational accidents and disease, covering curative and rehabilitative services.
- The statutory retirement insurance scheme is administered by various institutions (e.g. the *Deutsche Rentenversicherung Bund*) and covers medical rehabilitation services, with priority placed on reducing the risk of permanent disability among employees.

PROVIDERS

Ambulatory care physicians and psychotherapists accredited for reimbursement by SHI are organized into Regional Associations of SHI Physicians (*Kassenärztliche Vereinigungen – KV*). Each of the 17 state associations* elects members of the executive board via an assembly of delegates. The regional associations are responsible for securing outpatient care, planning capacity in each specialty and securing out-of-hours care. The regional associations are represented at the federal level by the umbrella organization known as the Federal Association of SHI Physicians (*Kassenärztliche Bundesvereinigung – KBV*), which is a quasi-public corporation within the system of joint self-government and represents the political interests of SHI-accredited physicians and psychotherapists in dealings with the federal government.

The Regional Associations of SHI Dentists (*Kassenzahnärztliche Vereinigungen – KZV*) and the Federal Association of SHI Dentists (*Kassenzahnärztliche Bundesvereinigung – KZBV*) resemble the organizations of physicians and share responsibility for dental care.

Hospitals are represented within the system of joint self-governance through private-law organizations rather than quasi-public corporations. The most important organization is the German Hospital Federation (*Deutsche Krankenhausgesellschaft – DKG*), which represents the interests of hospitals in relation to other stakeholders and the federal government. Its membership consists of 16 regional federations and 12 hospital associations, encompassing a wide variety of hospital types and ownership, including university, public municipal and private for-profit institutions.

Outside the scope of SHI, legally established professional chambers exist for physicians, dentists, pharmacists, veterinarians and psychotherapists. Health care professionals in these occupational groups are required by law to join their respective regional chamber. These organizations have the legal status of quasi-public corporations and are regulated by the laws of the state in which they are located. They are responsible for secondary training, for accreditation and continuing education, for setting professional and ethical standards, and for representing their members in dealings with policy-makers and in public relations. To coordinate their activities at the federal level, the regional chambers have formed federal chambers, such as

* The state with the highest population, North Rhine-Westphalia, is split into two associations.

the Federal Chamber of Physicians (also known as the German Medical Association) (*Bundesärztekammer*).

Historically, nurses have not been represented by an association structure. Since 2016 this has gradually changed through the establishment of nursing associations in three states (Rhineland-Palatinate, Schleswig-Holstein and Lower Saxony). Several other states are now discussing the establishment of nurses' associations, also against a background of a reform of nursing education and comprehensive reforms on the delivery and financing of nursing care (see Section 4.2 Human resources). In addition, there is a variety of groups with voluntary membership for nurses, midwives and other health professionals.

2.2.4 *Other actors*

PATIENT ORGANIZATIONS

The Federal Ministry of Health gives accreditation to patient organizations that consequently name up to five representatives for the Federal Joint Committee plenum. There are between 40 000 and 60 000 patient self-help groups with approximately 3 million members, including organizations for the disabled. Of these groups, only some 360 are also organized at the federal level. Moreover, a large number of self-help groups belong to the Association of Independent Voluntary Welfare Organizations (*Paritätischer Wohlfahrtsverband*) and take part in the Forum for the Chronically Ill and Disabled (*Forum chronisch kranker und behinderter Menschen*). Two large social associations are the *Sozialverband VdK Deutschland* (with some 1.6 million members) and the *Sozialverband Deutschland* (with some 525 000 members). They provide their members with counselling and legal support on issues related to social law and also represent, at the political level, the interests of social welfare recipients and individuals covered by social insurance, increasingly including people covered by SHI and patients.

PRIVATE SECTOR

On the payers' side, the 42 major providers of PHI (2020) are represented through the Association of Private Health Insurance Companies (*Verband*

der privaten Krankenversicherung), a powerful lobby group in the health care sector. Of the 42 private insurers, 26 are traded on the stock market and the other 16 are mutual insurers (Verband der privaten Krankenversicherung, 2019a).

The Association of Research-based Pharmaceutical Companies (*Verband forschender Arzneimittel-Hersteller*) represents 44 manufacturers (2020), or about two thirds of total pharmacy revenue. The Federal Association of the Pharmaceutical Industry (*Bundesverband der Pharmazeutischen Industrie*), with approximately 260 members in 2020, is an organization for small and medium-sized companies only. Two other associations represent pharmaceutical manufacturers with special interests: the Federal Association of Pharmaceutical Manufacturers (*Bundesfachverband der Arzneimittel-Hersteller*) represents the 400 or so producers of over-the-counter (OTC) pharmaceuticals, and the German Generics Association (*Deutscher Generikaverband*) represents the producers of generics.

The interests of producers of medical devices and technologies are represented by the Federal Association for Medical Technology (*Bundesverband Medizintechnologie*) and the German Industry Association for Optical, Medical and Mechatronic Technologies (*Deutscher Industrieverband für optische, medizinische und mechatronische Technologien*), also known as Spectaris. Additionally, producers with a wider product range can choose to be represented by the German Electrical and Electronic Manufacturers' Association (*ZVEI*). A newly founded platform represents the interests of manufacturers of mobile applications for early detection, monitoring, treatment or management of diseases (*Bundesverband Deutsche Startups*).

2.3 Decentralization and centralization

The most striking aspect of the decentralized health care system in Germany is the delegation of governmental power to corporatist institutions within the SHI system. Most of the legal rights and responsibilities are vested in corporatist associations of payers and providers in a system of self-governance, while institutions at the federal level (e.g. the Federal Ministry of Health) are responsible for setting the legal framework and the supervision of the main corporatist bodies (e.g. the Federal Joint Committee and the Federal Association of SHI physicians). Both the delegation of regulatory power to

corporatist institutions and the system of self-governance are the result of a long historical process (see Section 2.1 Historical background). However, the reliance on self-governance is continuously at the centre of political debate with the Federal Ministry of Health lately assuming a more direct regulative role (see Section 6.1 Analysis of recent reforms) (OECD/European Observatory on Health Systems and Policies, 2017).

Privatization is another important feature of the German health care system, although within a highly regulated market. In fact, some health care sectors are based entirely on private providers – for example, the ambulatory primary and specialized care provided by physicians and dentists, as well as pharmacies. In other sectors, both private not-for-profit and private for-profit providers co-exist with public providers – for example in the long-term care sector (see Section 5.8 Long-term care) or in the hospital sector (see Section 4.1.1 Infrastructure, capital stock and investments), in which there is a growing trend towards privatization.

2.4 Planning

In general, the rules, rights and values of the German SHI are set out in its core legislation (SGB V) and even at the level of the German constitution, while details are planned at state level or delegated to corporatist bodies.

The SGB V describes its task as "to maintain, restore or improve health" (§1), to which end "care is to be provided that reflects needs, is uniform and aligned with the generally recognized state of medical knowledge" (§70). Its core principles are solidarity and shared responsibility of the insured (§1, e.g. by participating in preventive measures). In line with the principle of cost-efficiency, services and benefits must be "adequate, appropriate and efficient" and may "not exceed the measure of what is necessary" (§12 and similarly §70). The German constitution requires living conditions to be equivalent throughout the country and an equal (non-discriminatory) treatment of each individual. Health promotion and protection, however, are not mentioned as an explicit goal of the German constitution.

Responsibilities for planning are divided between the federal government, the states and various institutions at the corporatist level. There is a lack of long-term strategic development and no national health plan exists to steer overall policy development in the health system (see Box 2.1). However,

various initiatives aim to build consensus in the pluralistic system – with prevention being the area with most progress. The Health Goals Forum (*gesundheitsziele.de*) is a joint coordination initiative by the federal and state governments and over 140 other institutions, which aims to build consensus on national health targets. In 2015 these targets were integrated into the core SHI legislation (§20 Abs 3, SGB V): (1) lower the risk, improve early detection and treatment of diabetes mellitus type 2; (2) decrease the mortality rate and raise quality of life for breast cancer patients; (3) reduce tobacco consumption; (4) growing up healthy: increase health literacy among children and adolescents, physical exercise and diet; (5) increase health literacy among the general population and strengthen sovereignty of patients; (6) prevention, early detection and treatment of depressive symptoms; (7) healthy ageing and (8) reduce alcohol consumption. The target of being born healthy was added in 2017 (gesundheitsziele.de, 2017).

BOX 2.1 Disease-specific programmes showcase the ability to develop joint, evidence-based policy

On the whole, the federal government's tools to steer the health system are mainly based only on high-level regulation and soft guiding through recommendations and project funding that aims to shape the different aspects of services. Disease-specific national plans are the only example where there is direct capacity for policy development and implementation. The *National Cancer Control Plan* (2008) was initiated by the Federal Ministry of Health but builds upon cooperation between various stakeholders. The Plan is organized towards 13 targets to improve care for cancer patients through earlier detection, reliable access and good-quality specialized treatment, as well as improved information and guidance for patients. Direct outcomes of the Plan include the introduction of early screening (and the reorganization of structured screening programmes) for cervical and colon cancer (see Section 5.1 Public Health), and the establishment of a comprehensive cancer registry (Bundesministerium für Gesundheit (BMG), 2017b). Along similar lines, the Robert Koch-Institute operates disease-specific surveillance on diabetes. The National Diabetes Surveillance reports regularly on 40 indicators to inform policy-making and public health activities to contain diabetes or improve the quality of life for patients. Information is compiled from various data sources and was first available in the 2019 report (Robert Koch-Institut (RKI), 2019a; Heidemann et al., 2019). The Institute is currently also developing a national surveillance programme on mental health.

The Act to Strengthen Health Promotion and Disease Prevention (2015) initiated the participative platform of the "*National Prevention Conference*" that is headed by the federal associations of four statutory insurance schemes (SHI, long-term care, accident, and retirement insurance) and the federal association of PHI. Additionally, a wide variety of stakeholders from the federal (4 ministries), state and municipal governments, patient representatives and others participate in the platform. The platform is required to develop national guidelines (also containing the Health Goals) on prevention that are to be translated into state law and document the activity and effectiveness of these measures in a review every four years, with the first review published in June 2019 (Nationale Präventionskonferenz, 2019).

2.5 Intersectorality

Apart from the Federal Ministry of Health (see Section 2.2.1 Federal level), most federal ministries also work on different population health issues. The Federal Ministry of Food and Agriculture (*Bundesministerium für Ernährung und Landwirtschaft – BMEL*) oversees a network that brings together programmes to promote healthy nutrition and physical activity among different population groups, for example children, pregnant women and elderly people. Due to the increased relevance of competition within the health sector over the last decade, e.g. among sickness funds and health care providers (see Section 3.3.3 Pooling and allocation of funds), consumer protection has also become a health-related topic. Health-related consumer protection falls under the responsibility of the Ministry of Justice and Consumer Protection (*Bundesministerium der Justiz und für Verbraucherschutz – BMJV*). The Federal Ministry of Labour and Social Affairs (*Bundesministerium für Arbeit und Soziales – BMAS*) is responsible for the participation of disabled people in the labour market, as well as for work-related mental health. Although various population health issues arise in almost all federal ministries (see Table 2.2), collaborations are rather small and heavily formalized.

Collaborations between different stakeholders tend to take place at the state and corporatist levels and are often associated with public health services (see Section 5.1 Public Health). Some states' public health services have initiated local committees known as "health conferences" (*Gesundheitskonferenzen*), bringing together a broad variety of providers, payers and self-help groups in

TABLE 2.2 Selected health-related issues and responsibilities of the federal ministries

MINISTRY	HEALTH-RELATED RESPONSIBILITIES	FURTHER INFORMATION
Federal Ministry for Economic Affairs and Energy	Health economy • Promoting digitalization within the health care sector (Guidance on health data protection, cross-sector strategy "Intelligent Networking", and supports programmes in the field of digital technologies) and supporting start-ups in the digital health sector • Supporting foreign trade/exports of the German health industry	https://www.bmwi.de/EN/
Federal Ministry of Justice and Consumer Protection	• Patient rights • Powers of attorney (living wills)	https://www.bmjv.de/EN/
Federal Ministry of Labour and Social Affairs	• Safety and health at work • Mental health in the workplace • Age-appropriate working environment "Working healthily for longer" • Quality criteria for occupational health management • Occupational medicine • Poverty, social inequality and health	https://www.bmas.de/EN/
Federal Ministry of Food and Agriculture	• Healthy nutrition • Safe Foods Regulatory body for the Federal Office of Consumer Protection and Food Safety (*Bundesamt für Verbraucherschutz und Lebensmittelsicherheit – BVL*) and the Federal Institute for Risk Assessment (*Bundesinstitut für Risikobewertung – BfR*)	https://www.bmel.de/EN/
Federal Ministry for Family Affairs, Senior Citizens, Women and Youth	• Pregnancy and infertility • Help and (informal) care • Education of care professionals • Dementia • Violence protection for women • Protection of children and minors	https://www.bmfsfj.de/bmfsfj/meta/en
Federal Ministry of Transport and Digital Infrastructure	• Noise protection • Traffic safety	https://www.bmvi.de/EN/
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety	• Environmental protection (chemicals, healthy nutrition, noise, indoor and outdoor air, climate change) Regulatory body for the Federal Office for Radiation Protection	https://www.bmu.de/en/
Federal Ministry of Education and Research	Health research (e.g. *Rahmenprogramm Gesundheitsforschung*)	https://www.bmbf.de/en/
Federal Ministry of Finance	Taxes on alcohol, tobacco, food and beverages	https://www.bundesfinanzministerium.de/Web/EN/

order to agree on health targets and improve the coordination of prevention measures. Several public health offices have also introduced such conferences at the municipal level (130 health conferences for one third of the counties in 13 states) (Hollederer, 2015).

The Federal Association of Prevention and Health Promotion (*Bundesvereinigung Prävention und Gesundheitsförderung e.V. – BVPG)* brings together partners from medical practice, science, economics and politics in order to improve cooperation, coordination and networking at the federal level. Currently, 132 organizations (e.g. the German Medical Association, German Federal Associations of Sickness Funds) are members of the BVPG (Bundesvereinigung Prävention und Gesundheitsförderung e.V. (BVPG), 2019).

2.6 Health information systems

Health service-related data are collected at various points in the German health care system and mirror the fragmentation between SHI and PHI, other social insurance schemes and sectors of care. The collected data are comprehensive (providers are required to collect data in order to request payment at the point of usage) and generally of high quality, but there is an array of databases at the federal and corporatist levels with limited linkages between them (Panteli et al., 2019; Schubert et al., 2014; Swart et al., 2014). Federal Health Reporting (*Gesundheitsberichterstattung des Bundes – GBE Bund*) supplies data on contextual factors (e.g. unemployment), population health status, determinants of health, prevention, health care services and health expenditures. The database is jointly operated by the Federal Statistical Office and the Robert Koch-Institute, but partly originates from various health system stakeholders and from international surveys (EU-SILC, ECHI or data from international organizations such as OECD and WHO). Results from Federal Health Reporting are available via an online dataset (www.gbe-bund.de) and several publications (e.g. Federal Health Reports, 1998, 2006, 2015) (Lampert et al., 2010; Robert Koch-Institut (RKI), 2015b).

The Federal Statistical Office compiles freely available aggregated statistics on population health status and mortality, health professionals and health expenditures. It also provides inpatient care statistics, e.g.

general provider information, inpatient diagnosis statistics at the point of discharge, and DRG-statistics.* Another important source of information is the nationwide surveys run by the Federal Statistical Office (or state statistical offices) that gather data on socioeconomic status, perceived health status, insurance status and financial protection. The most important surveys are the annual Microcensus and the household budget surveys done every five years.

The Robert Koch-Institute compiles population-based cancer registries from each state as well as epidemiological data on communicable diseases. Data on incidence and prevalence for these diseases are published online (www.rki.de/epidbull) or through various publications. Other morbidity data are drawn from the Institute's health monitoring surveys that are representative for the German population (e.g. KiGGS, DEGS and GEDA).

At the corporatist level, payer institutions in social security schemes such as sickness funds and long-term care funds compile and store master data (e.g. personal identifier numbers and personal information) and service-related data across sectors for their insured populations. This information is an important part of claims data that include statistics on hospitalization, ambulatory care provision, data on prescription drugs and inpatient rehabilitation (it is standardized only for SHI). In substitutive PHI claims data are not standardized by insurer or tariff.† Additionally, corporatist institutions engage in analysing claims data and publishing results directly and/or participate in research projects that draw on claims data.

The fragmentation of databases makes a comprehensive assessment of health system performance difficult. The multitude of initiatives and coexisting programmes means that there is a lack of systematic evaluation, comprehensive sector involvement, or overall formulation of goals for monitoring the performance of the health system (OECD/European Observatory on Health Systems and Policies, 2019).

---

* Notably, inpatient care statistics are the only statistics available across SHI and substitutive PHI.

† At the federal level, claims data across sickness funds are compiled as a basis for the risk-adjustment scheme by the Federal Office for Social Security (*Bundesamt für Soziale Sicherung – BAS*; see Section 3.3.3 Pooling and allocation of funds).

2.7 Regulation

As described in Section 2.2 Organization, the German health care system is shaped by the division of responsibilities, resulting in a complex and fragmented system. Competencies for regulation are subject to the separation of powers between the federal government, states and various institutions and interest groups at the corporatist level. Basic definitions are generally set by federal law in the Social Code Book V (see below), whereas many details are delegated to the corporatist level and to the Federal Joint Committee.

REGULATORY RESPONSIBILITIES AT THE FEDERAL LEVEL

The federal level addresses benefits in the various statutory insurance schemes, as well as uniform rules for providing and financing these benefits. The Social Code Book (*Sozialgesetzbuch – SGB*) is the foundation of social insurance in Germany. It regulates statutory insurance across different ministries. Although health-related social services are governed by several parts of the SGB, the most important of these is SGB V, which lays out the regulatory framework for the SHI system. Other insurance schemes also operate in the health care sector. These include the statutory scheme for occupational accidents and diseases (SGB VII); statutory retirement insurance (SGB VI), which represents a major source of financing for medical rehabilitative measures; and long-term care insurance (SGB XI).

While the legal framework of the SGB V is set at the federal level by the legislature, the Federal Ministry of Health is responsible for supervising the Federal Association of SHI Physicians, the Federal Association of Sickness Funds, and the Federal Joint Committee and its decisions. The responsibility for supervising sickness funds that operate nationally lies with the Federal Office for Social Security (*Bundesamt für Soziale Sicherung – BAS*), which is also entrusted with managing the risk-adjustment scheme between sickness funds and the central reallocation pool ("*Gesundheitsfonds*").

The Federal Ministry of Health is also responsible for long-term care, which is regulated by SGB XI, and structured quite similarly to SGB V. Other health-related responsibilities at the federal level include (1) the supervision of private health insurance companies by the Federal Financial Supervisory Authority (within the purview of the Federal Ministry of Finance), (2)

health-related consumer protection, which is within the remit of the Federal Ministry of Justice and Consumer Protection, and (3) environmental pollution and radiation protection, which are the responsibility of the Federal Ministry for Environment, Nature Conservation, Building and Nuclear Safety.

REGULATORY RESPONSIBILITIES AT THE STATE LEVEL

The state governments are responsible for capital investments, which are based on state-level hospital requirement plans (see Sections 5.4 Hospital care and 3.7 Payment mechanisms). These investments are made independently of hospital ownership and according to the priorities of each state government. The states are clearly responsible for major investments, such as large-scale medical technology and the construction of buildings, as well as for financing building maintenance and repairs.

A second major responsibility for the states are public health services (subject to certain federal laws concerning diseases that threaten public safety). Although some states operate these services themselves, most have transferred authority in this area to local governments. Public health services are responsible for supervising employees in health care institutions; preventing and monitoring transmissible diseases; supervising commercial activities involving food, pharmaceuticals or drugs; monitoring some aspects of environmental hygiene; delivering community-based psychiatric services; providing health education and promotion activities; and conducting medical inspections of school children.

The states coordinate their (public) health activities through the Working Group of Senior State Health Officials and the Conference of Health Ministers, neither of which has authority, however, to issue regulations. In addition, the states have established various joint institutions to enable them to perform certain tasks (see Section 2.5 Intersectorality).

In addition, the states are responsible for undergraduate medical, dental and pharmaceutical education, as well as for supervising the regional chambers of physicians, the Regional Associations of SHI Physicians, and the sickness funds operating within each state (see Section 4.2.4 Training of health workers).

REGULATORY RESPONSIBILITIES AT THE CORPORATIST LEVEL

The not-for-profit corporatist institutions within the SHI system are based on mandatory membership and internal democratic legitimization. They are financed by their members. Much of the decision-making in the SHI system takes the form of horizontal negotiations between corporatist institutions and other organizations of payers and providers at the federal and state levels.

In accordance with the principle of subsidiarity, a range of corporatist institutions, such as the sickness funds and Regional Associations of SHI Physicians, are mandated by SGB V to administer the SHI system under the supervision of federal and state authorities. Within this system of joint self-government, the corporatist institutions either enter into direct negotiations with one another or form joint decision-making committees with equal representation. While some of the tasks assigned by law to the corporatist institutions always require decisions made by joint committees (for example, defining benefits), other tasks are decided by joint committees only if no agreement can be reached in open negotiations (for example, setting the budget for ambulatory care). In yet other cases a joint committee is the first level of appeal against decisions taken by another joint committee (see Section 3.7.1 Paying for health services).

The joint committees at the federal level are the Federal Joint Committee, the Valuation Committee (ambulatory sector), the Extended Valuation Committee (ambulatory sector) and the Committee on Hospital Payment (hospital sector). At the state level there are state committees (§90 SGB V) and joint state committees (§90a SGB V) that can make recommendations on cross-sectoral care issues. Furthermore, there are arbitration committees (which can be called upon, for instance, if bilateral negotiations on reimbursement increases fail); accreditation committees and accreditation arbitration committees; and claims review committees and claims review arbitration committees.

The Federal Association of Sickness Funds and the German Hospital Federation jointly run the independent German National Institute for the Reimbursement of Hospitals (*Institut für das Entgeltsystem im Krankenhaus – InEK*), which supports the continuous development of the DRG system (see Section 3.7.1 Paying for health services). Similarly, the Institute of the Valuation Committee (*Institut des Bewertungsausschusses*), founded by the Federal Association of Sickness Funds and the Federal Association of

SHI Physicians, supports the work of the (Extended) Valuation Committee (*(Erweiterter) Berwertungsausschuss*) which defines the exact conditions for providing a particular service, e.g. by which physicians, for which patients, how often, in conjunction with which other services, documentation requirements, etc.

The Federal Joint Committee is the paramount decision-making body in the SHI scheme's system of joint self-government. All decisions related to ambulatory, dental and hospital care are made through the Plenary Group. The Plenary Group consists of three full-time neutral members and five representatives of the Federal Association of Sickness Funds, five representatives from provider groups (two from the Federal Association of SHI Physicians, two from the German Hospital Federation and one from the Federal Association of SHI Dentists), and five non-voting representatives of formally accredited patient organizations that have been given the right to participate in consultations and to propose issues to be assessed and decided upon. For decisions which concern only one or two sectors (e.g. only hospitals or only hospitals and ambulatory medical care, but not dental care), only the relevant provider organizations can vote on behalf of the providers.

Based on the legislative framework of the SGB V, the Federal Joint Committee issues directives relating to almost all sectors of care, e.g. the directive for technology assessment to determine inclusions or exclusions for the SHI benefits basket (see Section 2.7.3 Regulation of services and goods). They are mainly concerned with the coverage of benefits and assuring that SHI services are adequate, appropriate and efficient. They also seek to clarify rules for patients' access, to steer accountable behaviour of all office-based physicians, and to address questions of capacity and distribution of care (see Table 2.3). Particular areas of regulation by the Federal Joint Committee are defined in §92 SGB V. Nine sub-committees prepare proposals, which are then voted upon by the plenary. All sub-committees have representatives of the sickness funds, the relevant provider organizations and patient representatives.

In its decision-making, the Federal Joint Committee is assisted by the Institute for Quality and Efficiency in Healthcare (*Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen – IQWiG*), which examines the benefits and harms of medical interventions for patients. It provides information about the advantages and disadvantages of examination and treatment methods in the form of scientific reports and easily understandable health information for

the general public. A further independent institution, which was created to support the Federal Joint Committee, is the Institute for Securing Quality and Transparency in Healthcare (*Institut für Qualitätssicherung und Transparenz im Gesundheitswesen – IQTIG*), which – unlike IQWiG – is responsible for the quality of providers (and across sectors) (see Section 7.4 Health care quality).

2.7.1 *Regulation and governance of third-party payers*

The third-party payers in SHI are the sickness funds, which are not-for-profit, quasi-public corporations ("corporations under public law"; *Körperschaften des öffentlichen Rechts – KdöR*). Most sickness funds are run by (a) an executive board with two full-time managers responsible for day-to-day operations and (b) an administrative board (*Verwaltungsrat*), which elects the members of the executive board, adopts the by-laws of the sickness fund, and passes the budget. The Federal Office for Social Security supervises sickness funds that operate in more than three states. In 2020, 67 out of the total of 105 sickness funds fell into this category (Bundesamt für Soziale Sicherung, 2020b). Sickness funds operating in three or fewer states are subject to state supervision, which is the case for the regional sickness funds and some occupational sickness funds.

Sickness funds are the corporatist institutions on the payer side, represented by the Federal Association of Sickness Funds at the federal level for all SHI tasks, except those where the sickness funds compete with one another. Among these representation tasks are collective negotiations on contracts, e.g. prices, volumes and quality measures, and payment schemes with providers in ambulatory and inpatient care (see Section 3.7 Payment mechanisms). Based on a "federal master agreement" (*Bundesmantelvertrag*), the regional associations of sickness funds and individual sickness funds conclude regional contracts with the regional physicians' and dentists' associations, i.e. generally there is no direct contractual relationship between the provider and the sickness funds. For SHI, collective contracts are the predominant method of purchasing outpatient services. The services covered by the contracts are usually accessible to everyone with SHI and do not require prior authorization from an individual's own sickness fund. Prior authorization is necessary, however, for preventive spa treatments, rehabilitative services and short-term nursing care at home. In cases of doubt, the sickness funds

must obtain an expert opinion on the medical necessity of a given treatment from the Medical Review Board (*Medizinischer Dienst – MD*) (see Section 5.8 Long-term care).

The sickness funds are required by law to collect SHI contributions from their members, with the rate set uniformly by federal law (SGB V). Sickness funds transfer SHI contributions to a central reallocation pool, which redistributes the contributions among the sickness funds after adjusting for risk (see Section 3.3.3 Pooling and allocation of funds). The Federal Office for Social Security is responsible for supervising the legality of decisions taken by the sickness funds and administers the central reallocation pool and the risk-adjustment scheme.

The 42 private health insurance companies that offer substitutive PHI are based on voluntary agreements between the insurance company and their insurees (see Section 3.5 Voluntary (private) health insurance). Private health insurance companies are regulated by the Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht – BaFin*).

2.7.2 *Regulation and governance of provision*

ORGANIZATION

Regulation and governance of provision are also mostly delegated to corporatist institutions. The corporatist institutions on the provider side for ambulatory care are required by law to ensure that the geographic distribution and volume of acute medical care services are sufficient to meet the health needs of the population. The clearest examples of such institutions are the Regional Associations of SHI Physicians and Dentists respectively, which must guarantee the availability of ambulatory services, ensuring that physicians from all specialties are available according to community needs and are located within a reasonable distance of each individual's home. To meet this service availability requirement, a Regional Association must negotiate with the sickness funds operating in its particular state and set a prospective budget, which is ultimately allocated between its SHI-accredited members according to nationwide rules that have been adapted to regional circumstances (Figure 2.2) (see Section 3.7.1 Paying for health services).

SGB V sets the framework for these negotiations, specifying general categories of benefits and the scope of the areas to be negotiated between the sickness funds and the Regional Associations of SHI Physicians and Dentists. These negotiations determine the conditions of remuneration and the specific items in the ambulatory benefits basket. As a general rule, both areas are regulated in great detail in the ambulatory sector, whether through legislation or negotiations between providers and sickness funds.

The Regional Associations of SHI Physicians and Dentists must deliver the health services that have been defined by law and in contracts with the sickness funds. In doing so, the Regional Associations provide a guarantee to the sickness funds and the insured population that these services meet all legal and contractual requirements. Due to their supervisory and regulatory role, the Regional Associations were established as self-governing, quasi-public corporations. This status enhances their ability to influence decisions that generally fall within the clinical freedom of physicians, while at the same time supporting the principles of internal democratic legitimization and self-government. In return for these obligations, the Regional Associations enjoy a monopoly over the provision of ambulatory care. This monopoly means that hospitals, municipalities, sickness funds and non-physician health professionals are not permitted to provide ambulatory medical care outside of the collective contracting agreements, except for purposes mandated by legislation or by joint commissions of payers and providers.

Although the Regional Associations are obliged to guarantee the availability of ambulatory care services both during and outside normal working hours, the responsibility for ensuring the availability of more complex emergency services lies with the state governments, which have delegated this task primarily to hospitals (see Section 5.5 Urgent and emergency care).

Planning and regulation of hospitals are carried out by state ministries of health – and in the case of university hospitals, the state ministries of science – but based on the federal legal framework of the Hospital Financing Act. Due to the absence of corporatist institutions in the hospital sector, hospital owners contract individually with representatives of the sickness funds at the regional level, such as the regional associations of sickness funds. Usually, sickness funds participate in the collective negotiations with a hospital if their insured members account for more than 5% of the cases treated there. The conditions regarding the number and scope of services and the remuneration rates are the same for all sickness funds, however.

The conditions for the reimbursement of independent health care professionals other than physicians – such as physiotherapists or speech and language therapists – for treating SHI-insured patients are regulated in the Social Code and details are delegated to the Federal Joint Committee. §124 SGB V regulates the accreditation of SHI providers, who must fulfil certain prerequisites (training, practical experience, practice equipment, contractual agreements) if they want to participate in the care of the insured.

QUALITY

SGB V constitutes the framework for quality assurance. Basically, every provider in the German health system is required to participate in inter-institutional quality assurance measures and to run an internal quality management system. The details are defined by the Federal Joint Committee in the form of binding regulations. Additionally, regulations on specific requirements for the quality of structures, processes and outcomes are defined for sophisticated or complex service areas in the hospital and ambulatory care sectors. The Federal Joint Committee decides which service areas need additional requirements and how detailed these regulations are. The development of quality assurance in the health system has gathered momentum through the Reform of Hospital Structures Act of 2016 (*Gesetz zur Reform der Struktur der Krankenhausversorgung*) which focused on quality of care, and subsequent legislation.

Development and implementation of cross-facility quality measurement in the hospital sector started in 2001 and since then has been refined and expanded continuously. Most importantly for SHI, the Strengthening Competition Act of 2007 (*GKV-Wettbewerbsstärkungsgesetz*) mandated the Federal Joint Committee to develop and implement quality measurement across sectors. The technical execution of this task has been delegated to the IQTIG since 2016. The latest IQTIG quality report, which was based on data from 1811 hospitals, covered a total of 23 areas, such as obstetrics, transplantation, cardiac surgery, hip and knee replacement, pacemaker implantation and prevention of pressure ulcers, using a total of 221 quality indicators (Institut für Qualität und Transparenz im Gesundheitswesen, 2019). Hospitals with subpar results are being audited by experts in order to identify potential for improvement. Furthermore, hospitals are obliged to

run internal management programmes. Basic requirements are defined by the Federal Joint Committee and include the use of quality improvement cycles (plan-do-check-act), process flow descriptions, quality measurement and risk management measures, such as the use of check lists and error reporting systems.

The Federal Joint Committee was legally enacted (in 2004) to develop a list of mainly elective services where there is a positive relationship between the volume of services provided and outcomes. For those services, delivery of a predefined minimum volume is the condition for reimbursement. Currently, the minimum volume requirements relate to seven types of services (oesophageal and pancreatic surgery, transplantation of kidney, liver and stem cells, knee replacement and treatment of newborns with very low birth weight), while expansion to further services (e.g. lung resection for cancer) is in progress.

Legislation requires hospitals to publish standardized quality reports annually. The Federal Joint Committee determines the content and scope of these reports. The quality reports contain basic information such as number of beds, staffing, type and volume of services provided, and medical equipment. In addition, statements on compliance to legal quality requirements are reported, as well as the results of inter-institutional quality measurement. Besides these legally required quality assurance measures, hospitals may also participate in voluntary quality inspections and certification procedures, as well as in voluntary quality measurement initiatives.

Quality assurance in the ambulatory sector has also progressively been transformed from an initially voluntary task to a legal obligation. Since 2000 successive measures to improve the quality of care were introduced, including Disease Management Programmes, which facilitate the structured treatment of patients with chronic diseases (see Section 5.3 Primary care). Currently, Disease Management Programmes exist for ten types of chronic disease – diabetes type 1 and type 2, asthma, chronic obstructive lung disease, coronary heart disease, heart failure, breast cancer, depression, chronic back pain and osteoporosis. Ambulatory service providers who participate in Disease Management Programmes are obliged to collect data on treatment processes. Based on these data, sickness funds develop an evaluation of these Disease Management Programmes and the Federal Association of SHI Physicians generates quality reports, which give feedback to providers on the achievement of quality goals (e.g. guideline-adherent medication).

Ambulatory service providers also participate in the cross-sectoral quality measurement executed by IQTIG, by collecting follow-up data (e.g. on wound infections following hospital stays for surgical procedures).

Like hospitals, ambulatory service providers are required to run an internal quality management system according to basic requirements as defined by the Federal Joint Committee. Aiming to assist physicians in private practice, the Federal Association of SHI Physicians has developed a special quality management programme ("Quality and Development in Physician Practices"; *Qualität und Entwicklung in Praxen – QEP*). QEP comprises training, manuals, certification and teaching-and-learning groups. These groups serve as a forum in which SHI-accredited physicians can exchange experiences with colleagues and engage in reciprocal evaluation. Participation in QEP is voluntary.

Regulations on quality requirements related to the provision of specific ambulatory services (e.g. pain therapy, skin cancer screening, colonoscopy) are negotiated between the Federal Association of SHI Physicians and the Federal Association of Sickness Funds. Adherence to these regulations is reviewed by the Regional Associations of SHI Physicians. Some of these bilateral regulations are connected to higher-level regulations defined by the Federal Joint Committee (e.g. the regulation on early cancer detection).

Table 2.3 provides an overview of decision-making authority in various sectors of the German health care system.

2.7.3 *Regulation of services and goods*

BASIC BENEFITS BASKET

Chapter 3 of SGB V describes in very generic terms types of benefits that are included in the benefits basket, e.g. prevention of disease, disease screening, treatment of disease (ambulatory medical care, dental care, drugs, etc.) and leaves further regulations and the decision-making process (according to §§135, 137c, 137e, 137h SGB V) to the Federal Joint Committee, which has considerable latitude in defining the benefits basket for curative, diagnostic and therapeutic procedures.

Regulations to include interventions and technologies in the SHI benefits basket differ between ambulatory and hospital care. In ambulatory care, new

TABLE 2.3 Overview of the regulation of providers, 2020

	COVERAGE DECISIONS	LICENSING/ ACCREDITATION	CONTRACTUAL RELATIONSHIP BETWEEN SICKNESS FUNDS AND PROVIDERS	QUALITY ASSURANCE	FINANCING DECISIONS
Ambulatory care (primary and secondary care)	Basic definition pursuant to federal law (SGB V); details regarding inclusion and definition of services delegated to corporatist institutions at the federal level.	Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal (rules) and state (actual implementation) levels.	General rules according to federal law (SGB V); details delegated to corporatist institutions at the federal level. Usually collective contracting, but selective contracting is possible.	Mandated by federal law (*ambulatory care practices*: internal quality management; *regional physicians' associations*: external quality control); details delegated to corporatist institutions at the federal (rules) and state (actual implementation) levels.	*Reimbursement:* Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal (point values) and state (monetary valuation) levels.
Inpatient care	Basic definition pursuant to federal law (SGB V); details regarding exclusion of services delegated to corporatist institutions at the federal level.	Licensing according to state law.	De facto by state governments; legally, sickness funds may reject contracts negotiated with individual hospitals, but the final decision is taken by state governments.	Mandated by federal law (SGB V): internal and external quality control; details delegated to corporatist institutions at the federal level.	*Capital investment:* Basic definition pursuant to federal law (KHG; KHEntgG), but administration mainly by the states. *Running costs:* Basic definition pursuant to federal law; DRG system, mainly through corporatist institutions at the federal level, but also through the federal government, which has the right to act unilaterally if the aforementioned corporatist institutions at the federal level fail to reach an agreement within an allotted time.
Integrated, cross-sector care	Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal level (rules) and, at the state level, to individual providers or their associations who enter into selective contracting arrangements (actual implementation).	Conditions defined by federal law (SGB V).	Selective contracting for integrated care and collective contracting for ambulatory health care centres (*Medizinische Versorgungszentren*).	Mandated by federal law (internal and external quality assurance); details delegated to corporatist institutions at the federal level.	Budgets and volumes delegated to negotiations between sickness funds and providers.

Dental care	Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal level (Federal Joint Committee).	Licensing according to federal law; basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal (rules) and state (actual implementation) levels.	General rules according to federal law (SGB V); details delegated to corporatist institutions at the federal level.	Mandated by federal law (SGB V); details delegated to corporatist institutions at the federal (rules) and state (actual implementation) levels.	Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal (point values) and state (monetary valuation) levels.
Pharmaceuticals (ambulatory)	Basic definition pursuant to federal law (SGB V); details delegated to corporatist institutions at the federal level (Federal Joint Committee).	Market authorization pursuant to EU law or federal law.	Framework contract on federal level; details delegated to corporatist institutions at the federal and state level; agreements on rebates between sickness funds and manufacturers.	Basic definition pursuant to EU and federal law; pharmacovigilance by licensing agencies at the federal and European levels; details related to quality control of physician prescription behaviour delegated to corporatist institutions at the federal (rules) and state (actual implementation) levels.	No direct price regulation, but indirect measures, e.g. wholesale mark-up and pharmacy mark-up for prescription drugs by federal law; or proof of (additional) benefit; reimbursement rules delegated to self-governing bodies at federal level; negotiation and control of benchmarks per physician practice delegated to self-governing bodies at state level.
Public health services	Legislation only on certain aspects at federal level (e.g. infectious diseases and radiation); state legislation and rules vary by state.	None.	None.	Supervised by higher administrative level; internal quality management as part of administrative modernization initiatives at municipal or state level.	Legislation at state level; responsibility for implementation has been devolved to municipalities in 14 of 16 states.

Source: Authors' own elaboration based on Busse & Blümel, 2014

Notes: [a] The phrase "corporatist institutions" refers to the corporatist institutions of payers (sickness funds) and providers (SHI-accredited physicians; hospitals) that administer the German system of statutory health insurance (SHI) at the federal and state levels; SGB: Social Code Book; SGB V: Book V of the Social Code

technologies are, as all services, subject to authorization (*Erlaubnisvorbehalt*), i.e. SHI physicians may only offer new methods reimbursed by SHI if the Federal Joint Committee has proved its benefit and decided to include it in the SHI benefits basket. Conversely, in the inpatient sector all technologies and services are subject to "exclusion" (*Verbotsvorbehalt*). New technologies can be provided in hospitals as long as they have not been explicitly excluded by the Federal Joint Committee. The latter is an important prerequisite for ensuring that access to medical progress is guaranteed for seriously ill patients in hospitals.

Evaluation processes

In the **ambulatory sector** the Federal Joint Committee has delegated responsibilities for assessing reimbursable medical technologies to its Subcommittee on Method Evaluation (*Unterausschuss Methodenbewertung*). The evaluation of services requires criteria for need, medical necessity and efficiency, as these are the legal requirements. Evaluation results are announced publicly and medical associations, and possibly individual experts, are invited to submit evidence on the three mentioned criteria. The Subcommittee then examines the quality of the evidence presented by the applicant, the medical association(s) and individual experts, as well as the results of its own (literature) research, or commissions these processes to IQWiG. Therapeutic procedures are classified according to five categories of evidence, following internationally recognized schemes of evidence-based medicine. Diagnostic procedures are arranged in similar categories. For both classes of procedures, at least one study with level I evidence is necessary. Based on the evidence-based assessment of the information, the Subcommittee on Method Evaluation recommends whether the technology should be included in the SHI benefits basket. Once a positive decision has been taken to include a technology in the benefits basket of ambulatory physician care, another joint committee at federal level – the Valuation Committee (*Bewertungsausschuss*) – determines reimbursement issues and requirements for physicians who want to claim reimbursement for the delivery of this technology.

New technologies in the **inpatient sector** are evaluated according to the comparatively strict evidence criteria that apply to the ambulatory care sector, but only if they are referred for evaluation, and, as mentioned

above, they are only subject to "exclusion". That is, new technologies in the inpatient sector must pass evaluation only if proposed by a member of the self-governance bodies (e.g. the Federal Association of Sickness Funds, the German Hospital Federation, etc.), in which case the Federal Joint Committee evaluates and decides. If the decision is negative, SHI excludes it from reimbursement. Without such a decision, the new technology is implicitly included in the SHI benefits basket, even though a specific payment may be lacking.

The introduction of DRGs as a payment system (see Section 3.7.1 Paying for health services) does not require technology assessment; on the contrary, if a new diagnostic or treatment technology has not yet been integrated into the DRG system, a hospital may negotiate contracts for extra-budgetary payments to cover the costs of this technology, but only after receiving permission to do so from the InEK. The only exception requiring an assessment are new treatment and examination methods using high-risk medical devices (see Section 2.7.5 Regulation of medical devices and aids).

Insured patients are entitled to **therapeutic services by allied health professionals** other than physicians, such as physiotherapists, speech and language therapists, and occupational therapists. According to §138 SGB V, services provided by allied health professionals may be delivered to the insured only if their therapeutic use following quality assurance guidelines is recognized by the Federal Joint Committee, and these services are not explicitly excluded by the Federal Ministry of Health (§§32 and 34 SGB V).

The insured are also entitled to medical aids, such as prostheses, eye glasses, hearing aids, wheelchairs or respirators unless these are explicitly excluded from the benefits basket by law or through a negative list issued by the Federal Ministry of Health (see Section 2.7.5. Regulation of medical devices and aids). An example is the exclusion of visual aids from the SHI benefits basket, with the exception of children and young people under the age of 18 or for people with severe visual impairment.

Until 2003 all licensed pharmaceuticals were principally reimbursed by SHI. Since 2004 lifestyle medications and all over-the-counter medications with few exceptions, which are defined by the Federal Joint Committee, have been excluded from SHI coverage (see Section 2.7.4 Regulation and governance of pharmaceuticals for more details).

HEALTH TECHNOLOGY ASSESSMENT (HTA)

The regulation and evaluation of health technologies has increased in importance since the introduction of the SHI Modernization Act in 2004 and has become an integral component in defining the package of health services covered under SHI. In making these decisions, the Federal Joint Committee is aided by the IQWiG, which commissions HTA and makes recommendations for the inclusion or exclusion of technologies in the benefits covered under SHI – although it does not have any decision-making powers. Since 2004 several institutions and procedures have been introduced to facilitate the evidence- and information-based regulation of innovations.

The IQWiG usually receives commissions from the Federal Joint Committee and (less frequently) from the Federal Ministry of Health to produce reports on benefit assessment, on the assessment of cost-benefit relations or on guideline synopses. Further assessments relate to dossiers within the framework of the early benefit assessment of drugs (see Section 2.7.4 Regulation and governance of pharmaceuticals), the potential of non-pharmaceutical treatment in the framework of the testing regulation (according to §137e SGB V), and new treatment and examination methods with high-risk medical devices (according to §137h SGB V; see Section 2.7.5 Regulation of medical devices and aids). In addition to the reports and assessments that the IQWiG publishes, the Healthcare Strengthening Act (2015) (*Gesetz zur Stärkung der Versorgung in der GKV*) has given the institute the task of developing a public proposal process for HTA topics, and to commission and publish corresponding HTA reports. Since 2016 this has been happening under the name "Topic Check Medicine" (*Themen Check Medizin*). The IQWiG works on the basis of evidence-based medicine. It publishes a method paper at regular intervals, which summarizes the scientific standards used.

2.7.4 *Regulation and governance of pharmaceuticals*

When looking at the regulation of pharmaceuticals, two aspects have to be clearly separated: (1) licensing (i.e. market access), which is determined to a large degree by European regulations transposed into national law, and (2) decision-making about SHI reimbursement. Price setting is influenced by regulations regarding both the entire market and the SHI market.

LICENSING OF PHARMACEUTICALS

Pharmaceuticals are arguably the most regulated area of medicine in Germany. Market entry of pharmaceuticals for humans is the shared responsibility of the Paul-Ehrlich-Institute (PEI) (blood, blood products, sera, vaccines, advanced therapy medicinal products, allergens and tissues) and the Federal Institute for Pharmaceuticals and Medical Devices (*Bundesinstitut für Arzneimittel und Medizinprodukte – BfArM*) (all other drugs). National regulation applies if the medication has not yet been approved through the centralized authorization procedure of the European Medicines Agency (EMA), which applies in all EU Member States. It is mandatory for orphan drugs (to treat rare diseases), drugs against cancer, viral diseases and a few others, but manufacturers can choose it also for other drugs. The mutual recognition procedure (MRP) is used when a manufacturer whose drug has market entry in another country also applies for the drug's admission in Germany. In this case, market entry may only be refused by the BfArM in cases of public danger.

The national criteria for licensing pharmaceuticals are: scientifically proven safety and efficacy. This includes stages of testing in studies with healthy humans (phases I and II) and controlled clinical trials in people affected by the target disease (phase III). Based on the EU-wide standard on "good clinical practice" (Directive 2001/20/EC of the European Parliament and Council and Directive 2005/28/EC of the European Commission), extensive formalization and documentation of study procedures is required. However, only a marginal beneficial effect needs to be demonstrated in order to fulfil the efficacy criteria, and cost-effectiveness is not a determining factor. This has led to the admission of active substances that are merely minor modifications rather than real product innovations. Licensing is, in any case, limited to five years, after which an application for an extension is required.

Homoeopathic and anthroposophic drugs are exempt from the licensing procedures under the Pharmaceutical Act (*Arzneimittelgesetz*) and are subject to registration only. Market entry is not linked to obligatory comprehensive and systematic post-marketing surveillance. However, physicians and other professionals are requested to report suspected adverse reactions to medicines they or their patients encounter to the EudraVigilance database, which is operated by EMA.

Pharmacies in Germany enjoy freedom of establishment and accordingly can be established anywhere and at any time, resulting in competition for other pharmacies nearby. Regulatory principles are determined in the Pharmacy Act (1960) (*Apothekengesetz*). For example, third-party ownership is not allowed, which means that the operator of a pharmacy has to be a pharmacist, implying a personal responsibility and liability. Furthermore, pharmacists are not allowed to operate more than three pharmacies besides the main pharmacy (and these branches have to be in close proximity to one another) (see Section 5.6 Pharmaceutical care). The specific requirements for premises and equipment are regulated in detail in the Pharmacy Operating Regulations (*Apothekenbetriebsordnung*). Approved mail-order and internet pharmacies are fully fledged pharmacies under the same legal requirements as traditional pharmacies.

SHI REIMBURSEMENT OF PHARMACEUTICALS

Unlike many other countries, Germany does not have a "positive list" of SHI-covered, i.e. reimbursable, pharmaceuticals. Market entry for most drugs means SHI coverage; however, there are a few but important exceptions:

- OTC drugs are not reimbursed by sickness funds except for children under the age of 12. The Federal Joint Committee also lists OTC drugs and the indications for which they may be prescribed in adults (see below).
- Drugs for "trivial" diseases (common colds, oral cavity drugs with the exception of antifungals, laxatives and drugs for motion sickness) are legally excluded from the benefits basket for insured adults over 18.
- So-called lifestyle drugs (e.g. drugs for the treatment of erectile dysfunction), even if prescription-only, are legally excluded from the benefits basket.

Exceptions are determined by the Federal Joint Committee. The prescription of some OTC drugs is permitted if a drug is considered a standard of therapy in the treatment of serious diseases (e.g. acetylsalicylic acid as an antiplatelet aggregation inhibitor in coronary heart disease) and listed in the

Pharmaceutical Directive, Annex I. Off-label use is allowed for (1) pharmaceuticals listed in the Pharmaceutical Directive, Annex VI, when prescribed within the defined framework (patient group, indication, dosage, duration of treatment); (2) when used within a clinical study according to §35c 2 SGB V; or (3) in order to treat a serious life-threatening disease or a disease that impairs the quality of life permanently, for which no other therapy is available and where the therapy can be expected to lead to an improvement.

PRICING OF PHARMACEUTICALS

Price regulation for the entire pharmaceutical market

The regulation of pharmaceutical prices differs between the inpatient sector and the ambulatory sector. While hospitals may negotiate prices with wholesalers or manufacturers, the distribution chain and prices are much more regulated in the ambulatory sector. In both sectors ex-factory prices are basically determined by manufacturers without negotiations involving governmental agencies, direct price controls or profit controls (except for newly licensed drugs with beneficial effect in the ambulatory sector, see below). However, price setting by companies takes into consideration (indirect) regulatory mechanisms that apply to some parts of the market, such as reference pricing for pharmaceuticals covered by SHI.

The "Pharmaceutical Price Ordinance for Prescription-only Pharmaceuticals" (*Arzneimittelpreisverordnung*) is the legal basis which regulates pricing in the German pharmaceutical market. It applies to the entire prescription-only market, independent of the source of payment. It applies to human and animal drugs and to community pharmacies, but not to institutional pharmacies or to vaccines, blood replacement and dialysis-related drugs, for which sickness funds negotiate prices with manufacturers.

For prescription-only drugs, pharmacists are paid through a flat-rate payment of € 8.35 per pack plus € 0.21 for the Pharmacy Emergency Service plus a fixed margin of 3%. The margin is calculated from the manufacturer's price plus the margin of 3.15% for wholesalers (excluding VAT). For non-prescription pharmaceuticals, pharmacies can freely determine the prices, and no pharmacy margin is set. Although price reductions have been observed for travel packages, some lifestyle pharmaceuticals and selected high-price

pharmaceuticals (in competition with hospital pharmacies), the overall price level has not decreased as the abolition of fixed prices in 2004 was also used to instigate price increases. The retail price of all pharmaceuticals contains an additional 19% VAT. Unlike most EU Member States, Germany does not have a reduced VAT for pharmaceuticals (European Commission, 2019).

Price regulation for pharmaceuticals covered by SHI

Besides the price regulations along the distribution chain that apply to the entire ambulatory pharmaceutical market, special regulations are in force for pharmaceuticals paid by sickness funds. The main instruments, described here in turn, are (1) reference prices, (2) discounts and (3) indirect instruments such as generic substitution.

Reference prices

Drug prices are determined by the manufacturer as described above, but are under the influence of the indirect price control method of reference prices. Reference prices imply that sickness funds only reimburse pharmaceuticals up to a predefined ceiling (the so-called "*Festbetrag*", or fixed amount) defined per group of marketed equivalent or similar products. Patients pay the difference between the reference price and the market price. Pharmaceuticals that are priced at least 30% below the reference price are exempted from co-payments (Figure 2.3).

While the Federal Joint Committee is responsible for selecting and classifying drugs into reference price groups, the Federal Association of Sickness Funds determines the reference prices for these groups and the Federal Institute for Pharmaceuticals and Medical Devices (*Bundesinstitut für Arzneimittel und Medizinprodukte – BfArM)* publishes the latest list every 14 days. Reference prices can be set for drugs with (1) the same active ingredients, (2) pharmacologically and therapeutically comparable active ingredients and (3) therapeutically comparable effects (§35 SGB V). Reference pricing applies to off-patent medicines and to patented medicines without additional therapeutic benefit compared to already available products.

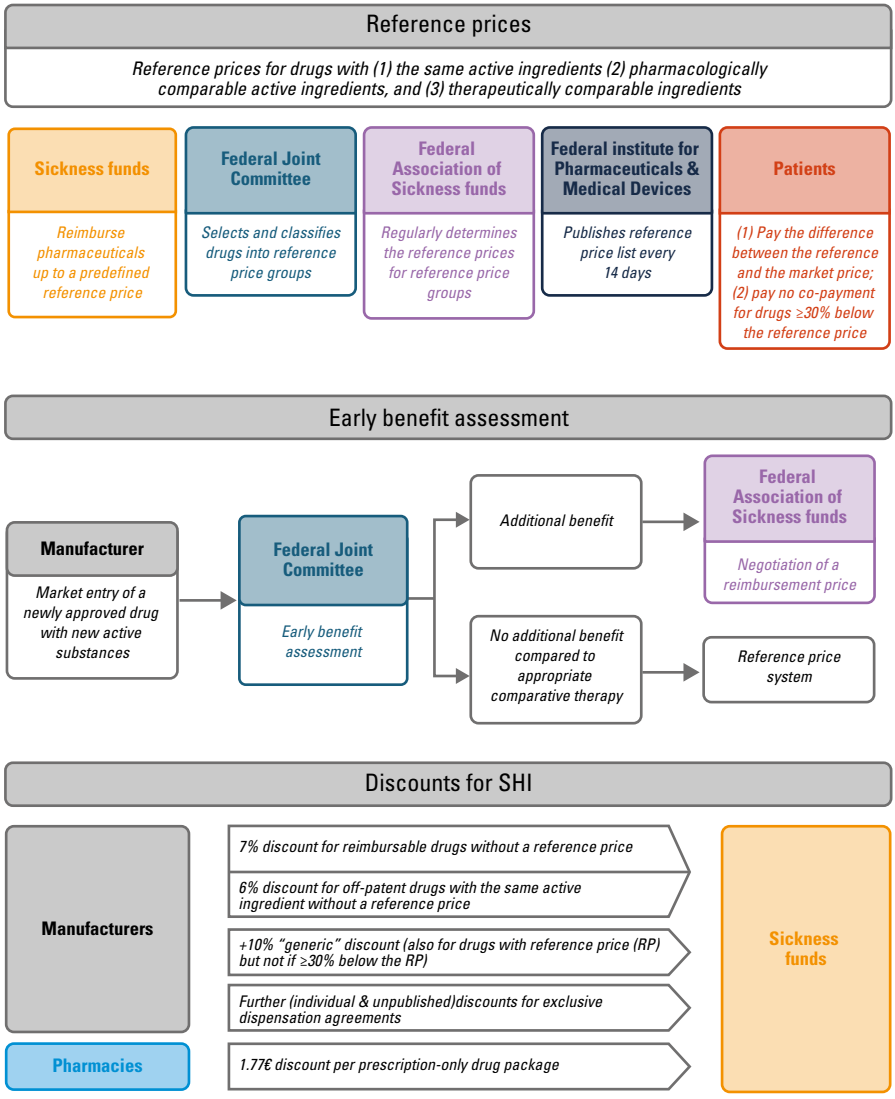
The 2011 Pharmaceutical Market Reform Act (*Arzneimittelmarktneuordnungsgesetz*) further strengthened the reference-price system as a mechanism for price regulation. For example, when creating reference price groups

it is now required that a sufficient number of pharmaceuticals should be available without cost-sharing for the patient (Coca et al., 2011). Furthermore, an "early benefit assessment" (§35 SGB V) is carried out for newly approved drugs with new active substances. If the Federal Joint Committee concludes that the new drug has no additional benefit compared to the appropriate comparative therapy, the drug is included in the reference price system (Figure 2.3). For drugs with an evaluated additional benefit, the Federal Association of Sickness Funds negotiates a reimbursement price based on the prices of appropriate comparators (the current standard of care). Negotiated prices apply from the second year, i.e. the 13th month from market introduction but not retroactively to the first year, during which manufacturers are free to set a price unilaterally. This represents a direct restriction for the manufacturer and a patent does not, per se, guarantee the manufacturer that reference prices will be avoided. Negotiations also determine the reimbursement price of newly authorized medicines without additional benefit for which no reference pricing group exists or can be formed.

Discounts

Pharmaceutical manufacturers and wholesalers are obliged by law to grant discounts (*Herstellerrabatt*) to the sickness funds (§130a SGB V). Since 2014 the manufacturer discount of 7% has applied to reimbursable drugs without a reference price and 6% for off-patent drugs with the same active ingredient (i.e. generic drugs) without a reference price (Figure 2.3). A further discount of 10% is due for off-patent drugs with the same active ingredient (the so-called generics discount, §130a para. 3b). This discount does not apply to pharmaceuticals which are at least 30% below the reference price. Thus, the overall discount is 16% for generics that are not subject to the reference price regulation, and 10% for those with a reference price but a price not reduced by at least 30% below that level. Sickness funds can negotiate and conclude additional individual discount agreements with drug manufacturers (§130a SGB V). For pharmaceuticals with the same active ingredient, these agreements assure the manufacturers the exclusive dispensation of their drug: pharmacies are obliged to dispense the discounted products unless the prescribing physician has excluded substitution. Furthermore, pharmacies are also obliged to grant discounts to the SHI as the largest customer. Since 2015 this discount has been set by law at € 1.77 per prescription-only drug.

FIGURE 2.3 Price regulation for pharmaceuticals covered by SHI – reference price system, early benefit assessment and discounts



Source: Authors' own compilation

Other indirect instruments

Another form of indirect price regulation in the SHI pharmaceutical market is the aut-idem ("or the same") provision introduced in 2002 through the Pharmaceutical Expenditure Limitation Act (*Arzneimittelausgaben-*

Begrenzungsgesetz). The Act imposes upon pharmacies the obligation to sell a pharmaceutical (generic) that is cheaper than the prescribed product provided that the physician issuing the prescription merely states the name of the active ingredient and/or has not excluded the replacement of the pharmaceutical by another product with the same active ingredient. If a discount contract exists between the sickness fund and the pharmaceutical manufacturer, this contract takes priority over the aut-idem provision.

2.7.5 *Regulation of medical devices and aids*

In contrast to pharmaceuticals, medical devices are defined as instruments, appliances, materials and other products that do not produce their main effect in a pharmacological, immunological or metabolic way. When looking at the regulation of medical devices, two steps again have to be clearly separated: (1) licensing (i.e. market access), which is determined to a large degree by European regulation transposed into national law, and (2) the national decision about SHI coverage (i.e. reimbursement).

CERTIFICATION (LICENSING) OF MEDICAL DEVICES

In May 2017 Regulation (EU) 2017/745 of the European Parliament and of the Council concerning medical devices (applicable from 26 May 2021) entered into force, replacing the former Medical Devices Directives 90/385/EEC and 93/42/EEC. Regulation (EU) 2017/746 of the European Parliament and of the Council on in vitro diagnostic medical devices (applicable from 26 May 2022) replaces the former In Vitro Diagnostics Directive 98/79/EC.

While the EU directives necessitated a transposition into national laws, the EU regulations are directly applicable in all EU Member States. Therefore, the previous German Medical Devices Act (*Medizinproduktegesetz*), which was in effect since 1995 to transpose the EU directives, is replaced with the new Medical Devices Implementing Act (*Medizinprodukte-Durchführungsgesetz*). This is part of the Medical Device Adaptation Act – EU (*Medizinprodukte-EU-Anpassungsgesetz*), which additionally describes amendments to eight other laws such as the SGB V, the Law on Advertising in the Health Care Sector

and the Pharmaceutical Act. Resulting amendments and innovations, among others, are:

- The assignment of a unique product identification number to improve the identification and traceability of products;
- The expansion of the European Databank on Medical Devices (EUDAMED);
- Stricter requirements for Notified Bodies, which are charged with the actual certification or CE marking of conformity with the regulatory requirements, and controls by the competent national authorities;
- The introduction of an additional control procedure for conformity assessment of the Notified Body for high-risk medical devices by a panel of experts (so-called Scrutiny procedure);
- Obligation of manufacturers to provide compulsory cover in the event of liability; and
- New classification rules for software, products containing nanomaterials, and so-called material medical devices (Bundesministerium für Gesundheit (BMG), 2019e).

Medical devices are classified in risk classes (see Table 2.4). The rules for classification consider the risk associated with the device, its degree of invasiveness and the length of time it is in contact with the body. This classification determines the type of assessment the manufacturer must undertake to demonstrate conformance with the relevant directive's requirements.

For products in risk class I, manufacturers can declare conformity with the regulatory requirements themselves. Starting with risk class I*, licensing of medical devices is the responsibility of Notified Bodies, which require accreditation by the Federal Ministry of Health. Medical device manufacturers can freely choose the Notified Body in one of the EU Member States to obtain the CE (*Conformité Européenne*) marking for their medical device. The safety and technical suitability of a device are the primary criteria for their market admission. In contrast to drugs, medical devices do not need to prove that they are beneficial in terms of potential health gain or effectiveness in order to be marketed.

TABLE 2.4 Risk classification for medical devices

RISK CLASS I	Products with low risk, not-invasive and reusable instruments (e.g. stethoscope, spatula, walking aid, wheelchair)
RISK CLASS I* Is (Device in sterile condition), Im (Device with a measuring function), Ir (Reusable surgical instrument)	Products with low risk, not-invasive, sterile, reusable or measuring function (e.g. sterile bandages, medical thermometer, reusable surgical scalpel)
RISK CLASS IIA	Not active products with medium risk, invasive and non-invasive products for short-term usage (e.g. cannula, diagnostic ultrasound unit)
RISK CLASS IIB	Active products with high risk, emitting substances or energies of potential risk (e.g. X-ray unit), and products for long-term usage (e.g. dental implant)
RISK CLASS III	Products with very high risk (e.g. joint replacements) and in contact with the vascular or nervous system (e.g. stents, pacemaker)

Source: Authors' own elaboration based on Busse et al., 2017b

COVERAGE/SHI REIMBURSEMENT OF MEDICAL DEVICES AND MEDICAL AIDS

While the requirements for the registration of medical devices are set at European level, coverage is defined at national level. In 2015 a kind of "early benefit assessment" of examination and treatment methods was introduced at the national level* in which high-risk medical devices (risk classes IIB and III) with particular invasiveness and based on a new theoretical and scientific concept are assessed. In addition, further potential assessment was created in order to bridge the scarce evidence base due to the low approval requirements (see Section 2.7.3 Health Technology Assessment (HTA)).

Decisions concerning the reimbursement of medical aids under SHI differ depending on the purpose and the sector of utilization, that is whether it (1) is utilized by the patient as a prescribed medical aid; (2) is utilized as part of a medical or surgical procedure (e.g. implants), with differences between hospital and ambulatory care; or (3) concerns large-scale medical devices that can provide various services. Diffusion and usage of medical

* Through §137h SGB V.

aids and prostheses is regulated by the Federal Joint Committee, which issues directives that limit the prescription of medical aids to the following cases: assuring the success of medical treatment, prevention of threatened health damage, preventing the health endangerment of a child, and avoidance or reduction of the risk of long-term care. Medical devices can only be reimbursed by SHI if they are included in the Catalogue of Medical Aids (*Hilfsmittelverzeichnis – HMV*) of the Federal Association of Sickness Funds, which also regulates the quality requirements for these products. Manufacturers can file a request for inclusion of a medical aid in the HMV at the Federal Association of Sickness Funds with proof of the necessary quality requirements and, when indicated, its benefit. The Federal Association of Sickness Funds finally decides on the inclusion of the medical aid in the Catalogue. Although the HMV has a regulating effect, the sickness funds have no legal obligation to reimburse the cost for listed medical aids.

The Federal Association of Sickness Funds is also responsible for selecting the medical aid and prosthesis types that could be submitted to reference prices and for defining the price limits. Currently, reference prices are set for incontinence pads, hearing aids, conductive incontinence aids, compression therapy aids and visual aids. Sickness funds reimburse the cost of covered medical aids up to the reference price for the specific type of aid, and physicians have to inform patients that they are required to pay the difference between reference and market prices for the respective type of medical aid or prosthesis. Sickness funds and their associations are able to conclude contracts with manufacturers of medical aids, either as basic or through individual agreement.

MEDICAL-TECHNICAL LARGE-SCALE EQUIPMENT

Medical-technical large-scale equipment ("big ticket technologies") are expensive medical devices, such as left heart catheterization units, Computed Tomography (CT) scanners, Magnetic Resonance Imaging (MRI) devices, Positron Emission Tomographs (PETs), linear accelerators, tele-cobalt-devices, high-voltage therapy devices and lithotripters. The purchase and operating costs of large-scale medical equipment and their distribution between the ambulatory and hospital sectors were frequently the subject of political discussions. The acquisition and maintenance costs of large-scale

equipment in hospitals, but not in ambulatory care, are ensured through the dual hospital financing of the states (see Section 4.1.2 Medical equipment). The number and density of medical-technical, large-scale equipment is not directly regulated. Various attempts by the corporatist and legislative bodies have aimed to improve the planning of large-scale equipment in the light of increasing costs and new device types (e.g. extracorporeal shock-wave lithotripters). The self-governing bodies are obliged to guarantee efficient use of this equipment via contracting and remuneration mechanisms.

2.8 Person-centred care

2.8.1 *Patient information*

The Internet has become a relevant source of health information in Germany over the last few years and is used particularly by younger patients. Conventional sources, e.g. family physicians/GPs, nurses, family and friends, and printed information materials are still used as sources for health-related information on both personal health and the health care system (Baumann & Czerwinski, 2015; Marstedt, 2018). Patient information is provided by various stakeholders in the health care sector as printed brochures, via the Internet, and by telephone or personal consultation. Patients can generally obtain high-quality information, but it is difficult to navigate through the diversity of available resources (see, for example, Table 2.5) and appraise the quality of different sources. The media increasingly report on issues related to health and health care, which also leads to a broad variety of information.

Sickness funds and the Associations of Statutory Health Insurance Physicians (*Kassenärztliche Vereinigung – KV*) and Dentists (*Kassenzahnärztliche Vereinigung – KZV*) are legally required to inform patients and offer advice. Sickness funds provide information mainly via personal contact (in their agencies), telephone, brochures and online services, and the KV and KZV offer advice via telephone and email (Kassenärztliche Bundesvereinigung (KBV), 2019a; Kassenzahnärztliche Bundesvereinigung (KZBV), 2019). Hospitals are also obligated by law (§137 SGB V) to publish quality reports every two years to increase transparency (see Section 2.7.2 Regulation and governance of provision).

TABLE 2.5 Patient information

TYPE OF INFORMATION	IS IT EASILY AVAILABLE?	COMMENTS
Information about statutory benefits	Yes	SGB V defines the broader framework of the statutory benefit catalogue. Each sickness fund reports on its included benefits, and some portals provide information on benefits for each sickness fund (e.g. www.gesetzlichekrankenkassen.de)
Information on hospital clinical outcomes	Yes (for each hospital and comparative information)	For example: • https://g-ba-qualitaetsberichte.de/ • https://www.weisse-liste.de • https://www.klinikbewertungen.de/ • https://www.vdek-kliniklotse.de • Hospital web pages • Sickness funds' web pages • Private health insurers' web pages • Directory of German Hospitals
Information on hospital waiting times	No	No data/information available
Comparative information about the quality of other providers (for example, GPs)	Yes	Search and rating portals for Physicians, Psychotherapists, Dentists, Home care services, Nursing homes, Sickness funds For example: • Physician search and rating portals (e.g. Jameda, Arzt-Auskunft, Sanego) • Home care and nursing homes (e.g. Pflegelotse, Pflege-navigator)
Patient access to own medical record	Yes	German Civil Code (*Bürgerliches Gesetzbuch – BGB*) §630g states that patients can request access to their medical record from physician/ hospital according to the law on patient rights
Interactive web or 24/7 telephone information	Yes (but not all services are 24/7)	For example: • Unabhängige Patientenberatung Deutschland offers information via telephone Mon–Fri 8am–10pm and Sat 8am–6pm and online 24/7 (not live) • Associations of Statutory Health Insurance Physicians/Dentists • Medical/Dental Associations • Sickness funds
Information on patient satisfaction collected (systematically or occasionally)	Partly	Only for hospitals, provided by hospital itself, sickness funds, Robert Koch-Institute, etc.
Information on medical errors	Yes	For example: • Hospital complaint centre • Federal Chamber of Physicians • Federal Association of Statutory Sickness Funds

Source: Authors

The website gesund.bund.de was established by the Federal Ministry of Health in September 2020 and offers objective, quality-assured, generally understandable, neutral, independent and reliable health information for patients and people in health professions, e.g. information about diseases, healthy living, and digital health (Bundesministerium für Gesundheit (BMG), 2020g).

The Institute for Quality and Efficiency in Healthcare (*IQWiG*) offers evidence-based patient information about diseases, diagnoses and health issues (e.g. allergies, mental health, prevention) on a specific "health information" website (www.gesundheitsinformation.de), also in English. Furthermore, the IQWiG offers information about examinations, procedures and treatments via HTA-reports "*ThemenCheck Medizin*" (www.themencheck-medizin.iqwig.de). The topics of these reports can be proposed by the population (Stiftung für Qualität und Wirtschaftlichkeit im Gesundheitswesen, 2019) (see Section 2.7 Regulation).

The publicly financed and politically independent Citizens Advice Bureaus (consumer centres) offer consumer protection advice on many issues, including those related to health. They evaluate the quality and cost of medical services, advocate patient-friendly arrangements in the health care sector and sponsor legislation to protect patients (www.verbraucherzentrale.de). While the individual consumer centres represent the interests of consumers at state level, the umbrella organization *Verbraucherzentrale-Bundesverband* represents the interests of consumers vis-à-vis politics, business and society at federal level (Verbraucherzentrale NRW e.V., 2019).

The German Cancer Research Centre (*Deutsches Krebsforschungszentrum – DKFZ*) provides patient information about cancer (www.krebsinformationsdienst.de) and offers advice via telephone and email (Deutsches Krebsforschungszentrum, 2019). In addition, the independent patient counselling service (*Unabhängige Patientenberatung Deutschland – UPD*) offers online (24/7) and telephone advice, also in some foreign languages (Turkish, Arabic, Russian) (UPD Patientenberatung Deutschland, 2019). The Federal Centre for Health Education (*Bundeszentrale für gesundheitliche Aufklärung – BZgA*) is responsible for health education in Germany and provides brochures and patient information, especially on health behaviour and prevention topics (Bundeszentrale für gesundheitliche Aufklärung, 2020). The assessment of benefits and harms of individual health services (IGeL) are provided via IGeL-Monitor (www.igel-monitor.de) from the Medical Service of the

Federal Association of Sickness Funds (*Medizinischer Dienst Bund – MDB*) (Medizinischer Dienst des Spitzenverbandes Bund der Krankenkassen e.V. (MDS), 2019). The Helmholtz Centre Munich offers a comprehensive allergy information service (www.allergieinformationsdienst.de) on diagnosis, therapy, prevention and protection against allergies (Helmholtz Zentrum München, 2019).

Other bodies that play an active role in patient advice and information services are the peer-review committees and arbitration boards of the professional chambers of physicians and dentists, the patient counselling services of the various professional chambers, patient safety organizations (e.g. www.aps-ev.de), and self-help groups. These patient information sources are intended to be easy to understand and some institutions even offer the information on their websites in plain language and sign language (e.g. BZgA, KBV) or provide information in different foreign languages (e.g. UPD). Medical errors are not published in a national register, but expert commissions and arbitration boards of the medical associations record and publish (anonymously) the number of medical treatment errors (Bundesärztekammer, 2020a).

According to the German Regulating Access to Federal Information Act (short title: Freedom of Information Act), freedom of information is legally granted to every person as an unconditional right to access official information from federal authorities (Bundesministerium der Justiz und für Verbraucherschutz, 2005; Bundesministerium des Innern, für Bau und Heimat, 2019). At a system level, no mechanisms are in place to guide patients around the health system but pilot projects with Case managers ("*Patientenlotsen*") especially help patients with chronic diseases to navigate through health care services (IGES Institut, 2018).

2.8.2 *Patient choice*

Patients in Germany generally have free choice of physicians (GPs and specialists). Individuals with private substitutive insurance (e.g. employees above an opt-out income threshold, the self-employed or civil servants) or who pay out of pocket have access to all licensed health care providers except when this is precluded by contractual limitations. Individuals covered by SHI may choose freely among ambulatory care physicians who have been accredited by

TABLE 2.6 Patient choice

TYPE OF CHOICE	IS IT AVAILABLE?	DO PEOPLE EXERCISE CHOICE? ARE THERE ANY CONSTRAINTS (E.G. CHOICE IN THE REGION BUT NOT COUNTRYWIDE)? OTHER COMMENTS?
Choices around coverage		
Choice of being covered or not	No	Mandatory to be covered either in SHI or PHI
Choice of public or private coverage	No – only under specific circumstances	Choice of private coverage for specified population groups, e.g. certain self-employed or employees with higher income (see Section 3.3.1 Coverage)
Choice of purchasing organization	Yes	Free choice of sickness fund (for SHI) or private health insurer (for PHI)
Choices of provider		
Choice of primary care practitioner	Yes	Free choice
Direct access to specialists	Yes	Free choice
Choice of hospital	Yes	Free choice
Choice to have treatment abroad	Yes	Covered if in ambulatory care (in SHI)
Choices of treatment		
Participation in treatment decisions	Yes	According to §630c BGB, provider and patient should collaborate within the treatment process
Right to informed consent	Yes	Mandatory for every medical procedure (§630d BGB)
Right to request a second opinion	Yes	By law, for elective surgeries (§27b SGB V), also possible for any other treatment (SHI)
Right to information about alternative treatment options	Yes	Mandatory for providers (§630e BGB)

Source: Authors' own elaboration

the Regional Associations of SHI Physicians to treat SHI-covered patients (i.e. some 98% of all ambulatory care physicians in Germany). Patients may also choose freely among hospitals that have been contracted by the sickness funds; the beds in these hospitals represent 99% of all hospital beds in the country. Since 2009 all residents in Germany are required to have statutory health and long-term care insurance or substitutive coverage through a PHI plan. Patients who are eligible for coverage through the SHI system have virtually free choice of sickness funds and, in general, may switch sickness funds after an 18-month waiting period.

Individuals covered by SHI are free to take out supplementary health insurance offered by private insurance companies. Individuals with substitutive PHI may also choose freely among private health insurers. For those insured under substitutive PHI switching from one private insurance company to another has been made easier since the possibility was introduced in 2007 to have active life reserves transferred from an old to a new insurer. Long-term care funds/insurers cannot be chosen freely as these are administratively connected to the sickness fund/health insurers (see Section 5.8 Long-term care).

Recipients of long-term care benefits have free choice of their care provider based on the principle of self-determination. They can choose between in-kind benefits, cash benefits or a combination of the two. In general, patients can choose between different treatment options (if available) out of the given alternatives from a provider. Based on patient rights, other possibilities for patient choices relate to participating in (shared) treatment decisions and requesting second opinions from different providers (see Table 2.6).

2.8.3 *Patient rights*

Since 2013 the Patient Rights Act (*Gesetz zur Verbesserung der Rechte von Patientinnen und Patienten*) has anchored patient rights in the German Civil Code §630a–h for all medical treatments by physicians and other health care professionals. Patients in Germany have the right to choose their physician and hospital freely; to seek a second opinion; to receive medical treatment according to recognized standards; to determine the treatment and its extent; to have the cost covered by their sickness funds for necessary communication aids to interact with physicians; to have medical procedures performed only with their legal consent; to receive a (patient) receipt (*Patientenquittung*) from their sickness fund, physicians, dentists or hospitals with a listing of costs and services obtained; to view their own medical records and have copies made at their own expense; to have their patient data treated with confidentiality; and to receive compensation in the event of medical error, lack of informed consent, or injury caused by pharmaceuticals or medical devices (see Table 2.7).

Since 2006 there is also a Charter of Rights for People in Need of Long-term Care and Assistance containing eight articles on the following areas:

self-determination and support for self-help; physical and mental integrity, freedom and security; privacy; care, support and treatment; information, counselling and informed consent; communication, esteem and participation in society; religion, culture and beliefs; and palliative support, dying and death (Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ), 2019).

In the wake of the Patient Rights Act, mandatory complaint management systems were introduced in the hospital sector in 2013. At the state level, the professional chambers of physicians, dentists and pharmacists are urged to establish complaint systems and arbitration boards for the extrajudicial resolution of medical malpractice claims. An ombudsperson is responsible for arbitrating disputes between patients and companies that offer private health and long-term care insurance, and for addressing the needs of patients and individuals with disabilities. Patients harmed by negligent actions by health care providers or manufacturers of pharmaceuticals or medical devices have the right to compensation according to tort law. They may address their complaints free of charge to the above-mentioned arbitration boards, which are staffed by independent physicians and lawyers. Sickness funds also support patients through the SHI Medical Review Board, which provides counselling and can draft expert reports to help resolve malpractice claims.

Physicians, dentists, psychotherapists, pharmacists and other professionals in ambulatory care are bound by professional codes of conduct. In all states, these codes of conduct require physicians, dentists and psychotherapists to take out liability insurance or proof of equivalent coverage. The situation for pharmacists varies between states. Although institutional providers are responsible for compensating patients in cases of medical malpractice, the law does not stipulate which financial precautions these institutions must take. Naturally, many hospitals and long-term care institutions take out liability insurance as well. An increasing number of them, however, cannot – or are unwilling to – shoulder the rising premiums for liability insurance on their own. An increasing number of institutional providers are thus forgoing liability insurance altogether and sharing risk through fund arrangements with other hospitals.

In addition to general tort law, there are several special laws governing medical malpractice claims under certain circumstances, such as injury from severe previously unknown adverse effects of pharmaceuticals or vaccination, HIV transmission through untested blood products (only in people infected

before 1989 and claims filed by 1995), or for participants in clinical trials. Affected people must prove that their injury resulted from negligence.

TABLE 2.7 Patient rights

	Y/N	COMMENTS
Protection of patient rights		
Does a formal definition of patient rights exist at national level?	Yes	Provided by the Federal Ministry of Justice and Consumer Protection and the Ministry of Health (Bundesministerium für Gesundheit (BMG) et al., 2019)
Are patient rights included in legislation?	Yes	Since 2013 (Patients' Rights Act) – §630a–h BGB
Does the legislation conform with WHO's patient rights framework?	Yes	
Patient complaints avenues		
Are hospitals required to have a designated desk responsible for collecting and resolving patient complaints?	Yes	Hospitals are obliged to have a patient-oriented complaint management procedure (§135a SGB V). Quality management guideline (QM-RL) of the Federal Joint Committee defines the concrete implementation (Gemeinsamer Bundesausschuss, 2016). Furthermore, some states provide independent and voluntary patient advocates (*Patientenfürsprecher*) by regional law
Is a health-specific Ombudsperson responsible for investigating and resolving patient complaints about health services?	Yes	Ombudsperson for SHI-insured and for substitutive PHI
Are there other complaint avenues?	Yes	For example, at the professional chambers of physicians, dentists and pharmacists
Liability/compensation		
Is liability insurance required for physicians and/or other medical professionals?	Yes	Physicians are obliged to have liability insurance (§21 professional code of conduct (*Musterberufsordnung*))
Can legal redress be sought through the courts in the case of medical error?	Yes	Via civil courts
Is there a basis for no-fault compensation?	Yes	Patients have the right to compensation according to tort law
If a tort system exists, can patients obtain damage awards for economic and non-economic losses?	Yes	Injury and damage awards (§630h BGB)
Can class action suits be taken against health care providers, pharmaceutical companies, etc.?	No	Only individual action suits

Source: Authors' own elaboration

3

Financing

- Germany spent € 390.6 billion on health in 2018, which corresponds to 11.7% of GDP. Per capita expenditure in 2018 was US$ 6098 (adjusted for differences in purchasing power). Germany is among the European countries with the highest health expenditure, with strictly public sources accounting for 73.5% of current expenditure on health while private sources make up 26.5%. Among these, private households financed 13.6%.
- More than a quarter of current health expenditure is spent on the inpatient sector (27.9%), closely followed by the ambulatory care sector (26.1%), long-term care (14.8%) and pharmaceuticals (13.7%).
- Health insurance is compulsory in Germany, provided either under the SHI scheme or through substitutive PHI. Employees are usually insured in the SHI, but people whose income is above a fixed threshold or who belong to a certain professional group, e.g. the self-employed or civil servants, can instead opt to enroll in PHI for full coverage. Around 87% of the population is covered though SHI, while approximately 11% has substitutive PHI coverage. The other 2% (e.g. soldiers) are covered under special programmes. Around 61 000 people are uninsured.
- Contributions towards SHI, with its 105 sickness funds, constitute the major system of financing health care in Germany. The sickness funds are responsible for collecting contributions, which they transfer to a central reallocation pool known as the *Gesundheitsfonds*, which pools and reallocates the revenues according

to a risk-adjustment mechanism. The general fixed SHI contribution rate is 14.6% of gross income and in addition sickness funds can charge a supplementary contribution which is, on average, 1%. Both contributions are equally shared between employer and employee, and non-earning spouses and children are insured free of charge. In contrast to SHI, PHI premiums are not dependent on income, but on age and health risk.

- Services in ambulatory SHI care provided by office-based physicians (GPs and specialists), dentists, pharmacists, midwives and many other allied health professionals are subject to predetermined price schemes (which are different for SHI and PHI patients) and are usually paid on a fee-for-service basis. The inpatient sector is financed by two different sources: investments are financed through the states, while operating costs are financed through the sickness funds, private health insurers and self-pay patients via case fees (DRGs).

3.1 Health expenditure

Germany spends a substantial amount of its wealth on health care. According to the Federal Statistical Office, which provides the latest available data on health spending, total health expenditure was € 390.6 billion in 2018. This corresponds to 11.7% of GDP. The health expenditure calculation is based on the OECD System of Health Accounts. Although the Federal Statistical Office, OECD and WHO collect data in a similar way, their reported figures, as presented in this chapter, vary occasionally. Table 3.1 shows the latest health expenditure data from WHO (baseline year 2018), which reports slightly lower estimates than the other two sources mentioned above. According to WHO data, total current health expenditure as a share of GDP recorded the highest increase between 2008 and 2009 (from 10.2% to 11.1%), which can be explained by a strong rise in health care spending that occurred alongside a simultaneous decrease in GDP due to the economic crisis (see Section 1.2 Economic context). Per capita health expenditure more than doubled between 2000 and 2018 from US$ 2687 (adjusted for differences in purchasing power (PPP)) to US$ 6098.

Health insurance was made mandatory in 2009, including for people who previously had taken out voluntary coverage in the PHI system (see

Section 3.5.1 Substitutive (full-cover) private health insurance). This made substitutive PHI compulsory for certain population groups and thus explains the sharp increase in the recorded spending under "public sources" in national statistics* and the simultaneous decrease in strictly private health expenditure between 2008 and 2009. Due to this reclassification, voluntary health insurance (i.e. complementary and supplementary) decreased from 10.7% of overall health expenditure in 2008 to 2.6% in 2009 and has accounted for around 9% of private health spending since 2010.

TABLE 3.1 Trends in health expenditure in Germany, 2000–2018

	2000	2005	2010	2015	2018
Current health expenditure per capita in International $ (PPP)	2 687	3 268	4 311	5 352	6 098
Current health expenditure as % of GDP	9.8	10.2	11.0	11.1	11.4
Public expenditure on health as % of total health expenditure[a]	78.2	75.5	83.4	84.1	84.6
Public expenditure on health per capita in International $ (PPP)[a]	2 102	2 469	3 596	4 500	5 146
Private expenditure on health as % of total expenditure on health	21.8	24.5	16.6	15.9	15.4
Public expenditure on health as % of general government expenditure	17.2	16.7	19.4	21.3	21.8
Government health spending as % of GDP	0.8	0.8	0.7	0.7	0.7
OOP payments as % of total expenditure on health	12.2	14.0	13.9	12.8	12.5
OOP payments as % of private expenditure on health	55.9	57.2	83.0	80.7	80.0
Private (voluntary) insurance as % of private expenditure on health	38.3	37.4	8.2[b]	9.4	9.2

Source: World Health Organization, 2020c

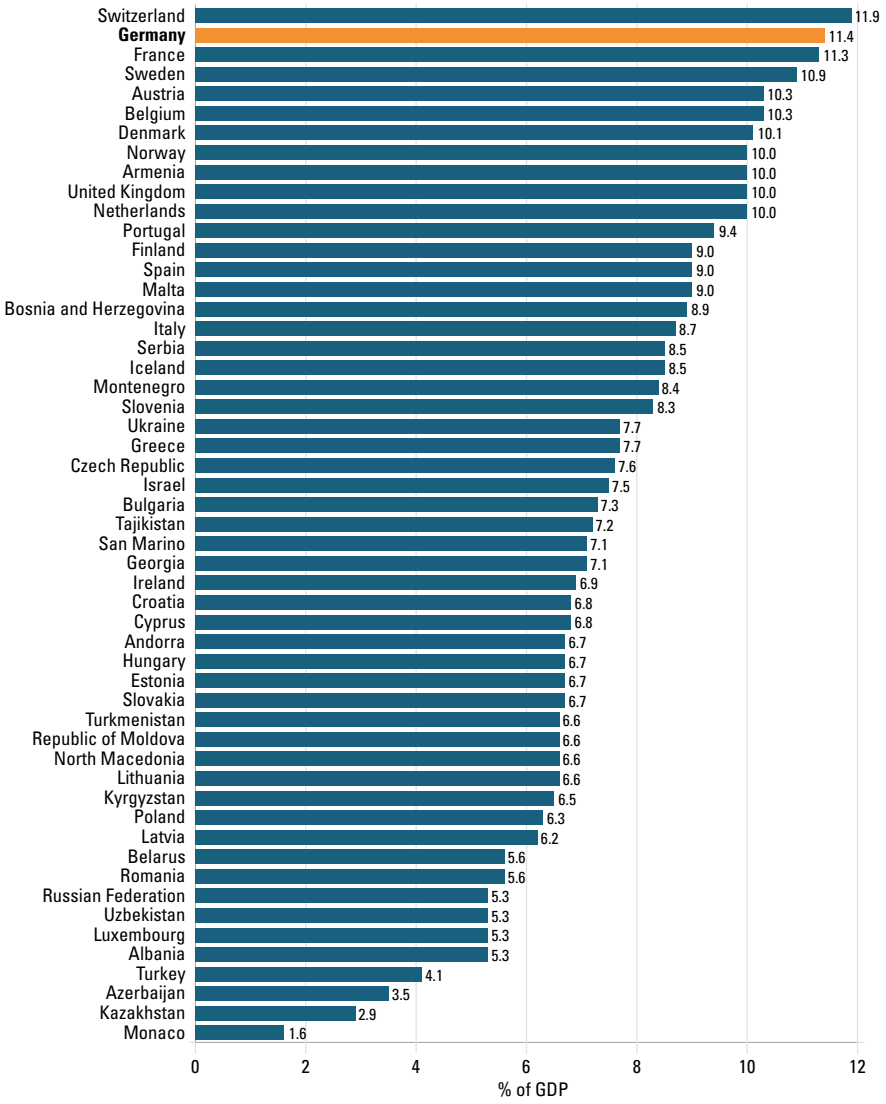
Notes: [a]In this table, data reported under public expenditure for health include substitutive (compulsory) private insurance because it is mandatory. Please note that the WHO GHED database records compulsory PHI expenditure under private sources.

[b] From 2009 private substitutive health insurance became compulsory for certain population groups and is no longer counted under this category of private voluntary insurance.

* In this chapter, the calculation for expenditure from public sources follows the same model as in national statistics and includes social health insurance, substitutive (compulsory) private insurance (because it is mandatory), taxes and other social insurances (long-term care, accident, unemployment, retirement).

According to the WHO data, Germany's health spending (11.4% of GDP) ranked second among European countries in 2018, just behind Switzerland (11.9%), and followed by France (11.3%), Sweden (10.9%), Austria (10.3%) and Belgium (10.3%). The EU28 average was 8.4% (Figure 3.1).

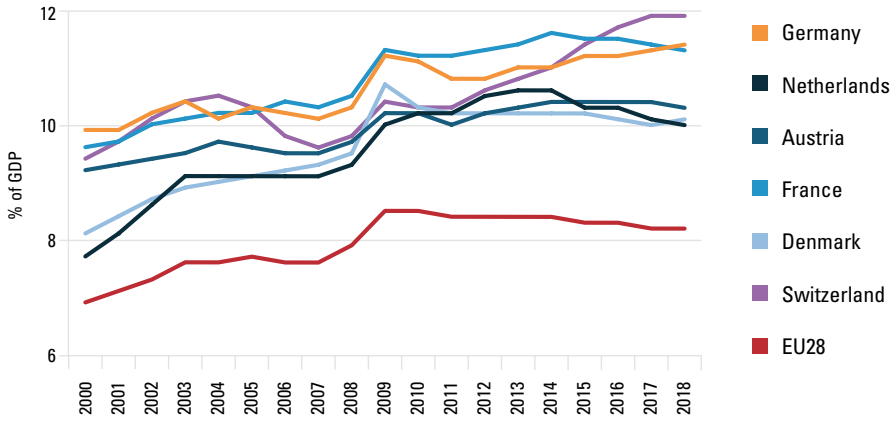
FIGURE 3.1 Current health expenditure as a share (%) of GDP in the WHO European Region, 2018



Source: World Health Organization Regional Office for Europe, 2020

In the past, Germany showed steady growth in health expenditure as a share of GDP, reaching 10.3% in 2003. In 2004, the year in which a major health reform was implemented, health expenditure decreased slightly by 0.2 percentage points, and remained constant until 2008 when health expenditure fell somewhat to 10.0%. Health spending reached 11.1% in 2009 (explained mainly by the contraction in GDP), subsequently decreased in 2010 and 2011, and has slightly increased since then (Figure 3.2). Figure 3.2 shows that Germany had the second highest level of health expenditure as a share of GDP after Switzerland in the group of selected European countries (Austria, Denmark, France, the Netherlands and Switzerland) during the early 2000s, before it was surpassed by France. In 2018 Germany again had higher spending than France. The difference between the German value and the EU28 average slightly decreased between 2000 and 2015, but it is still 3.2 percentage points (compared to 3.0 percentage points in 2000).

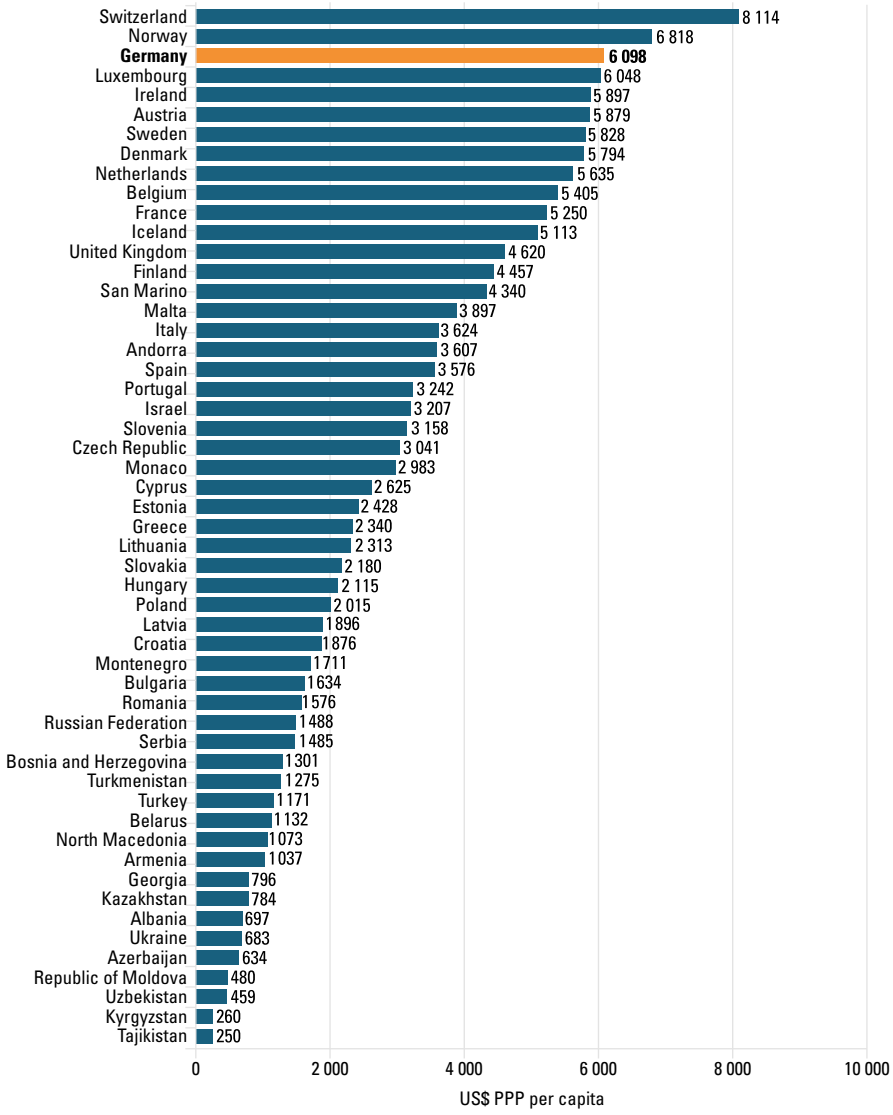
FIGURE 3.2 Trends in current health expenditure as a share (%) of GDP in Germany and selected countries, 2000–2018



Source: World Health Organization Regional Office for Europe, 2020

In terms of per capita health spending measured in US$ PPP, Germany's expenditure in 2018 (US$ 6098) was higher than in almost all other European countries, and only smaller than in Switzerland and Norway (Figure 3.3).

FIGURE 3.3 Current health expenditure in US$ PPP per capita in the WHO European Region, 2018



Source: World Health Organization Regional Office for Europe, 2020

In this chapter, the share of total health expenditure from "public sources" is calculated by including governmental and various social insurance sources, as well as compulsory private health insurance (since 2009), since the latter is mandatory for certain groups. On this basis, publicly funded health expenditure increased in Germany from 83.4% to 84.6% of total health expenditure

TABLE 3.2 Expenditure on health (as % of current health expenditure) according to function and type of financing, 2018

	INPATIENT CARE	AMBULATORY CARE	LONG-TERM CARE	PHARMACEUTICALS	PUBLIC HEALTH	ADMINISTRATION	OTHER SERVICES	TOTAL
General government	0.5	0.3	1.0	0.1	0.5	0.1	0.1	2.6
Statutory health insurance	21.8	17.1	1.7	9.2	0.02	3.1	5.0	57.9
Statutory long-term care insurance	-	-	6.3	-	-	0.4	3.5	10.2
Statutory retirement insurance	1.0	0.1	-	0.002	-	0.1	0.002	1.2
Statutory accident insurance	0.3	0.3	0.1	0.1	-	0.6	0.2	1.6
Private health insurance[a]	2.5	3.3	0.2	1.0	-	1.0	0.7	8.7
Employer[b]	1.3	1.8	0.3	0.6	-	-	0.3	4.3
Private household out-of-pocket	0.5	3.2	5.2	2.7	-	-	2.0	13.6
Total expenditure	27.9	26.1	14.8	13.7	0.5	5.3	11.8	100

Source: Statistisches Bundesamt, 2019d

Notes: [a] In this table the share under "private health insurance" includes the expenditures for the mandatory private substitutive/comprehensive health insurance, private complementary health insurance, mandatory private long-term care insurance, and supplementary private long-term care insurance.

[b] This category of employer expenditure (separate from the employer's contribution to SHI) is mainly due to expenses reimbursed by public employers for their civil servants and may explain discrepancies between German and international sources regarding the size of the private share of total health care expenditure.

between 2010 and 2018 (Table 3.1). If we were to exclude compulsory private health insurance from this calculation, as some databases do, the share of public expenditure would be around 73.5% (see Table 3.2).

A large part of health care expenditure can be attributed to the SHI system (see Section 3.2 Sources of revenue and financial flows). Even though SHI dominates the German discussion on health care expenditure and reform(s), its actual contribution to overall current health expenditure was

57.9% in 2018 (Table 3.2). The other three pillars of social insurance contributed an additional 13% of current health expenditure: statutory retirement insurance with 1.2% (mainly for medical rehabilitation), statutory insurance for occupational accidents and disease with 1.6%, and statutory long-term care insurance with 10.2%. Governmental sources contributed another 2.6%. Government expenditure accounts for a further 1.6% of total health expenditure, which is spent on investments – primarily for hospital financing (and which is not included in the calculations for current health expenditures).

More than a quarter of current health expenditure is spent on the inpatient sector (27.9%), closely followed by the ambulatory care sector (26.1%), LTC (14.8%) and pharmaceuticals (13.7%) (Table 3.2). Over recent years LTC spending has grown more strongly than expenditure on other sectors as demand for services has increased. The latest LTC reform is likely to further increase expenditures because the benefits basket and eligibility criteria have been expanded (see Section 5.8 Long-term care and Chapter 6 Principal health reforms).

3.2 Sources of revenue and financial flows

A large part of health care expenditure in Germany is derived from the SHI system (see Table 3.2). Contributions to the 105 sickness funds constitute the major system of financing health care. The sickness funds are responsible for collecting contributions, which they transfer to a central reallocation pool known as the *Gesundheitsfonds*, which is responsible for pooling and reallocating the revenues according to a risk-adjustment mechanism (see Section 3.3.3 Pooling and allocation of funds).

General tax revenue is also used for various purposes in the health care system. All tax-based budgets, at federal as well as state level, are determined by legislatures acting on proposals from their governments. In addition, the Hospital Financing Act stipulates that investment costs should be paid from state taxes as well as by owners of public, private not-for-profit and private for-profit hospitals, if listed in the state's hospital requirement plan. Therefore, states receive tax money for investments in their hospitals (see Section 3.7.1 Paying for health services).

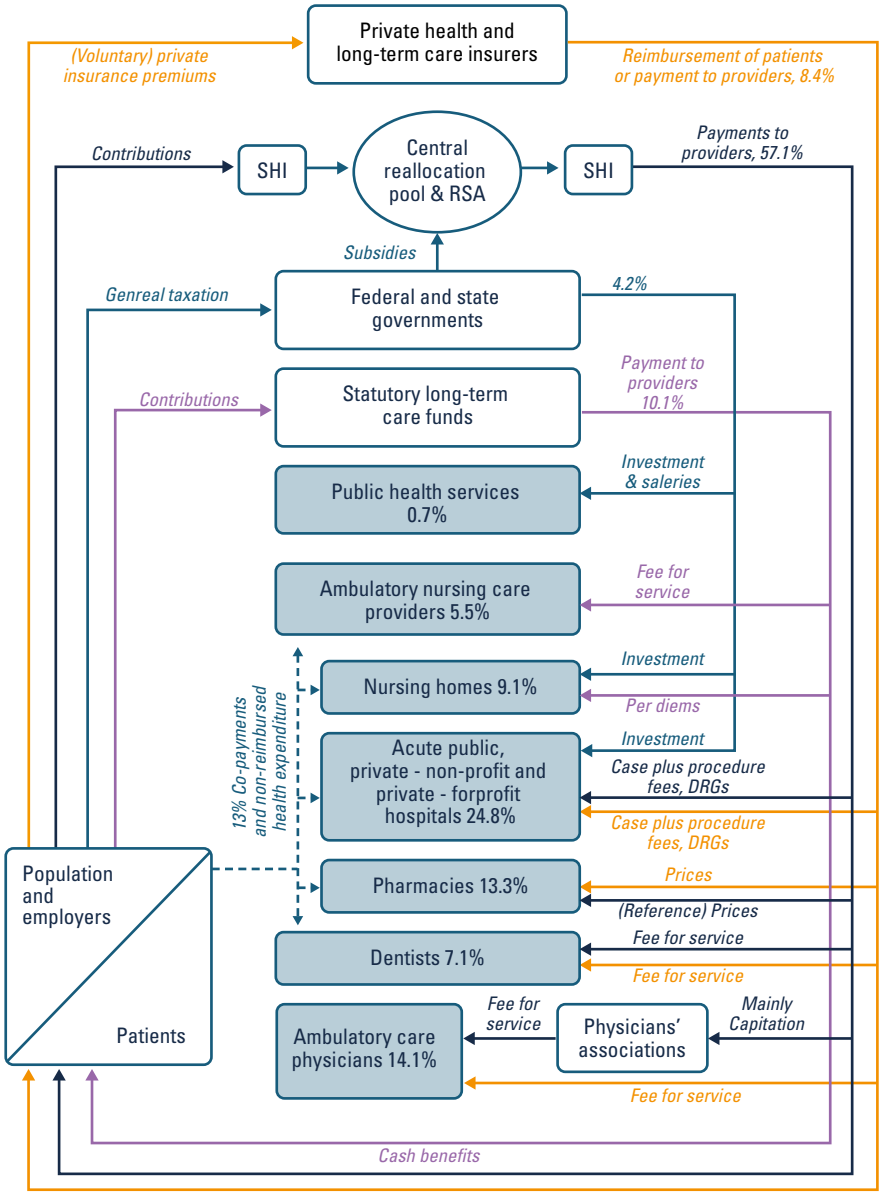
Taxes as a source of health care financing have decreased throughout

the last decade, falling from 10.8% of total health expenditure in 1996 to 4.2% in 2018. The most substantial decrease has been observed in spending on long-term care (about 50%), reflecting the unburdening of municipal budgets after the introduction of statutory long-term care insurance (see Section 5.8 Long-term care). Nevertheless, other spending on investments has decreased as well. Altogether, general government and statutory public sources accounted for 73.5% of current expenditure on health. Private sources accounted for a total 26.5% of total current expenditure: this includes direct out-of-pocket payments made by private households (13.6%). Private insurers financed 8.7%, which includes expenditures for substitutive/comprehensive health insurance, complementary health insurance and long-term care insurance.

It should be noted that the largest tax-financed item – the subsidies for SHI – is not declared as such in the fiscal statistics. Sickness funds receive a fixed amount from the federal budget for several benefits relevant to family policies: maternity benefits, sick-pay for parents caring for sick children, in-vitro fertilization, sterilization for contraceptive purposes, and prescription-only contraception up to the age of 21 and legal abortions. The federal government transfers its subsidy to the central reallocation pool (see Section 3.3.3 Pooling and allocation of funds). In 2012 the federal subsidy was € 14 billion. In order to consolidate the federal budget, the subsidy was temporarily reduced to € 10.5 billion in 2013 and € 11.5 billion in 2015. In 2016 it was again at € 14 billion and from 2017 it has been set at € 14.5 billion annually (Bundesministerium für Gesundheit (BMG), 2020j). Although these funds come from general taxation, these sums are coded as "statutory health insurance" in health expenditure statistics.* Figure 3.4 shows the main financial flows between the population, purchasers and health care providers in the German health care system in 2018 – including public health services and long-term care (except the purchasers and providers mentioned in the footnote).

* If the source were coded under general taxation, the share of taxes as a percentage of total health expenditures would be nearly 10% and the expenditures from statutory health insurance proportionally lower.

FIGURE 3.4 Financial flows (sources of finance and expenditures on providers as a percentage of total health expenditure in 2018)



Source: Authors' elaboration based on Statistisches Bundesamt, 2019d

Note: Sources of finance not presented in the figure (as a share of total health expenditure in 2018): statutory retirement insurance (1.2%), statutory accident insurance (1.5%), and employers (4.2%). Providers not presented: practices of allied health professionals (4.4%), health sector trade handicrafts (5.5%), preventive and medical rehabilitative care institutions (2.6%), transportation (1.4%), administration (5.2%), investments (1.8%), and all other providers (0.5%).

3.3 Overview of the statutory financing system

Health insurance is compulsory in Germany, either through SHI or substitutive PHI. Although this section addresses substitutive PHI only marginally, a detailed description is given in Section 3.5 Voluntary (private) health insurance.

3.3.1 *Coverage*

BREADTH: WHO IS COVERED?

In the wake of the Strengthening Competition in SHI Act, since January 2009 all residents in Germany have been legally required to have health insurance, either in SHI or substitutive PHI. Around 87% of the population is covered through SHI, while 10.8% has substitutive PHI coverage. The other 2% (e.g. soldiers) are covered under special programmes. Sickness fund membership is mandatory for employees whose gross income does not exceed the opt-out threshold (*Jahresarbeitsentgelt-Grenze* or *Versicherungspflichtgrenze*). Those earning above the threshold may choose to remain within SHI as "voluntary members" or take out substitutive PHI. The opt-out threshold was € 62 550 gross per year in 2020. It changes annually according to the overall changes in salary over the preceding calendar year (Bundesministerium für Arbeit und Soziales (BMAS), 08.10.2019). Furthermore, if not previously covered by substitutive PHI, students, unemployed individuals and pensioners are required to obtain SHI coverage. Within SHI, non-earning dependents are, under certain conditions, covered free of charge. Self-employed individuals may also choose SHI coverage if they were members of a sickness fund prior to becoming self-employed. Alternatively, they may take out PHI. Civil servants are insured in PHI, but can opt to join SHI; however, in most cases it is not financially beneficial for them. Civil servants do not require full coverage, as they are partly covered by "*Beihilfe*" (a system of medical reimbursements for civil servants, classified under "employers" in international health accounts). As a result, SHI, which does not offer partial coverage, is comparatively expensive, leading to most civil servants choosing PHI.

Almost every person covered by SHI has the right to choose between

sickness funds (the exception is the farmers' sickness fund). Furthermore, members can switch to a new sickness fund every 18 months with two months' notice. Voluntary members – those earning above the threshold – can also move from one fund to another at any time with two months' notice. A decision to leave the SHI system in favour of PHI cannot be revoked, however.

The current number of people without coverage cannot be determined precisely, as the various data sources do not lead to the same findings. Data from the Microcensus, which is conducted every four years and asks about health insurance coverage, are usually cited in this context. Based on this source, an estimated 61 000 people, or 0.08% of the German population, did not have health insurance in 2019 (Statistisches Bundesamt, 2020h). The Federal Statistical Office points out, however, that there are likely a number of unreported cases, including people who did not answer the question about health insurance in the survey. The uninsured include mainly the self-employed, wealthy people who object to having health insurance, poor people who cannot afford it and/or fall through the cracks of the welfare system, as well as people who had voluntary insurance but failed to pay their contributions. Another population group with a high risk of being without coverage is undocumented migrants (see Box 3.1).

SCOPE: WHAT IS COVERED?

Independent of their status, the amount of contribution paid or the duration of insurance, SHI members and their dependents are entitled to the same benefits. Sickness funds must offer the same benefits to their insured, although they can add benefits (e.g. health promotion, homoeopathy) to compete for members. The following types of benefit are currently included in the benefits basket, usually in generic terms through chapter 3 of SGB V:

- prevention of disease, health promotion at the workplace (§§20–24b);
- maternity and delivery (§24d–i);
- disease screening (§§25 and 26);
- treatment of disease (ambulatory medical care, dental care, medicines, psychotherapy, care provided by allied health professionals,

medical aids, inpatient/hospital care, nursing care at home, and certain areas of rehabilitative care, sociotherapy) (§§27–43b);
- dental prostheses and orthodontics (§§55–58);
- transport expenses (e.g. emergency and rescue care) (§60); and
- certain other benefits like patient information and supporting self-help groups.

BOX 3.1 What are the key gaps in coverage?

Health insurance is mandatory in Germany, resulting in nearly universal coverage for residents. However, the complex coverage mechanisms mean that certain population groups are at risk of not having health insurance due to financial or administrative hurdles. One such group is low-income, self-employed people since it can be difficult for them to afford SHI contributions or PHI premiums. To reduce the financial burden for this group and to close coverage gaps, SHI stipulations were changed in January 2019. The reference amount used to calculate the minimum contribution (irrespective of the actual income) was lowered from € 2284 to € 1038 per month.

SHI covers a broad benefits basket, well beyond essential services, and benefits are the same for all those insured. Individuals covered by substitutive PHI usually enjoy benefits equal to or better than those covered by SHI (with some exemptions, e.g. prevention or psychotherapy). This depends, however, on the chosen premium. Those insured with PHI who have not paid premiums in three months receive a benefit reduction and are only eligible for emergency and maternity care. Benefit coverage is also limited for asylum seekers, recognized refugees and undocumented migrants. During the first 15 months of their stay, they are often only entitled to emergency care, maternity care and preventive care (e.g. screenings and all recommended vaccinations).

There is a relatively low degree of cost sharing in Germany, with 13.6% of health spending (national data) coming from out-of-pocket payments. User charges apply to inpatient stays, medical goods and some ambulatory services. Although scope and depth of coverage were reduced in 2004, user charges and out-of-pocket spending are comparatively low and only 2.4% of households had catastrophic health spending in 2013, which indicates that those insured under SHI enjoy good financial protection (Siegel & Busse, 2018) (see Section 7.3 Financial protection).

The Social Code regulates preventive services and screening in considerable detail (for example concerning diseases to be screened for and screening intervals) but leaves further regulations to the Federal Joint Committee (see Section 2.7 Regulation). Covered services are usually accessible to everyone with SHI and do not require prior authorization from an individual's sickness fund. Prior authorization is necessary, however, for preventive spa treatments, rehabilitative services and short-term nursing care at home. In cases of doubt, the sickness funds must obtain an expert opinion on the medical necessity of a given treatment from the Medical Review Board (see Sections 5.8 Long-term care and 2.7.3 Regulation of services and goods).

Insured people are entitled to medical aids, such as prostheses, eye glasses (for those under 18), hearing aids, wheelchairs or respirators unless they are explicitly excluded from the benefits basket through a negative list issued by the Federal Ministry of Health (see Section 2.7.5 Regulation of medical devices and aids). Aids with small or disputed therapeutic benefit or low selling price (e.g. wrist bands) are excluded from the benefits basket. Furthermore, lifestyle medications and all over-the-counter medications are no longer subsidized by the sickness funds, with the exception of those for children under the age of 12. Transport expenses to ambulatory care are limited to exceptional cases and require an approval from the sickness fund. An approval is presumed to be granted if the therapy is necessary and the person in question (a) has a severe physical impairment that limits personal mobility, (b) has been assessed as having a grade III, IV or V need for long-term care, (c) is blind or cannot move without assistance, or (d) needs transport to and from oncological radiation or chemotherapy, or ambulatory dialysis.

In addition to these benefits in kind, sickness funds give sick pay to their employed members, which is 70% of the last gross salary (maximum 90% of net salary) (§§44–51 SGB V), from week 7 up to week 78 of the certified illness, while employers continue to pay 100% of the salary during the first six weeks of sickness.

Home nursing care is regulated separately within the statutory LTC insurance. However, organizational responsibilities and financing obligations are still subject to debate; for example, the Federal Social Court decided that medical aids for recipients of statutory LTC insurance have to be paid by their statutory sickness fund.

DEPTH: HOW MUCH OF THE BENEFIT COST IS COVERED?

User charges are fixed by law (§61 SGB V) and are uniform across all sickness funds. People covered by SHI must pay user charges for some health services, e.g. hospital stays, prescription drugs, dentures, medical aids, transportation, services by allied health professionals (e.g. physiotherapy) and rehabilitation (see Section 3.4.1 Cost-sharing (user charges)). Co-payment amounts are standardized to € 10 per inpatient day (up to a ceiling of 28 days or € 280 per year) and to 10%, with a minimum of € 5 and a maximum of € 10, for ancillary services and products in ambulatory care, e.g. for pharmaceuticals. The actual medical and dental treatment is free of user charges. User charges account for a comparatively low share of health expenditure. In 2018 private households spent € 4.1 billion on user charges, which corresponds to 7.9% of all household out-of-pocket spending that year and 1.1% of total health spending* (Statistisches Bundesamt, 2019d).

Exemptions from co-payments have a long tradition in Germany, being granted either to specific population sub-groups, to the poor or to people with substantial health care needs. Population sub-groups which are exempt from user charges are children and adolescents up to the age of 18 (except for dentures, orthodontic treatment and transportation) and women requiring maternity care. Furthermore, for all adults there is an annual cap on user charges equal to 2% of household income and 1% for people with severe chronic illness (see Section 3.4.1 Cost-sharing (user charges)).

3.3.2 *Collection*

GENERAL GOVERNMENT BUDGET

At the federal level, health care-related financing is part of the budgets of the Ministries of Health, Defence (military health care), Interior (police officers and civil servants) and Education and Research. At the state level, health-care financing mainly flows from the budgets of the Ministries of Health

* This figure includes user charges for LTC. Legally defined user charges are not so high in LTC except for care aids/devices.

(especially capital investment for hospitals and public health services) and Science (investment in university hospitals and medical and dental training). The municipalities are also important sources of revenue.

Other purposes include free governmental health care schemes for police, military, young people in the federal voluntary service, prisoners, immigrants seeking asylum and recipients of social welfare. All recipients of social welfare, who are not insured elsewhere, and a proportion of immigrants seeking asylum must choose a sickness fund and have the same rights and duties as other insured. Municipalities do not pay contributions on behalf of the recipients of social welfare but reimburse sickness funds for health care services that were actually delivered to the individual.

TAXES, CONTRIBUTIONS OR PREMIUMS POOLED BY A SEPARATE AGENCY

Regulations for setting SHI contribution rates have changed several times since 2009 (for more details on the development of the contribution rate and the relation to SHI financing, see Busse & Blümel (2014)). From 2011 the uniform contribution rate has been set by federal law at 14.6% of gross income. There is a reduced contribution rate of 14.0% for sickness fund members who are not entitled to sick pay. If the expenditures exceed the allocations through the central reallocation pool (see Section 3.3.3 Pooling and allocation of funds), sickness funds can charge their insured a supplementary contribution. The supplementary contribution is also subject to centralized pooling and risk adjustment. The supplementary contribution rate is set by each sickness fund individually but applies to all members of the fund. The Federal Ministry of Health determines and publishes the expected average contribution rate every year (§242a SGB V). The actual supplementary contribution rate was on average 0.83% of gross wage in 2015, 1.08% in 2016, 1.11% in 2017, and 1.08% in 2018, ranging between 0.0% (regional sickness fund *AOK Sachsen-Anhalt*) and 2.7% (company-based sickness fund *BKK Stadt Augsburg*) (GKV-Spitzenverband, 2019). Due to expected higher expenditures for medical care in 2020, the expected average contribution rate was increased to 1.1% (GKV-Spitzenverband, 2020b). Both the uniform contribution rate of 14.6% and the supplementary contribution are equally shared between employer and employee.

SHI contributions are dependent on income and not on risk; non-earning

spouses and children of members are covered without any surcharges. Contributions are based exclusively on income from gainful employment, pensions or unemployment benefits, and not on savings, capital gains or other forms of unearned income (see Box 3.2). The contributions increase proportionally along with income up to an upper threshold, which is € 56 250 per year or € 4 687.50 per month in 2020.

For self-employed artists, journalists and writers, the federal government participates in health insurance through a subsidy. Students pay a uniform per capita premium which is set at 70% of the general contribution rate of 14.6% (so 10.22%) based on an income level equal to the maximum public subsidy for students (currently € 752 per month). This results in a contribution of € 76.84 per month from 1 October 2020. In addition to this, students may have to pay the full supplementary contribution. In the case of retired and unemployed people, the institutions that administer the statutory retirement insurance and the Federal Employment Agency respectively take over the financing role of the employer. Pensioners must pay contributions also from company pensions and other non-statutory pensions from which they deduct the full contribution rate.

BOX 3.2 Is health financing fair?

German SHI is based on solidarity, i.e. contributions are based on the ability to pay and rise proportionally with income, while the contributions are redistributed according to the needs of the insured. The problem with SHI contributions is that they are not based on the total economy but only on the employment-based income of insured persons up to the threshold. Contributions are therefore not levied on higher incomes or other forms of income (e.g. capital, rent). Another issue that limits the fairness of the financing system is the option for high-income people to opt for PHI. Both the contribution threshold and the possibility to take PHI reduce SHI revenues and undermine the principle of solidarity. This argument is backed by political parties that demand that PHI coverage should be restricted to certain professional groups or be abolished altogether. Conversely, as high income people – both in PHI and SHI – pay relatively more taxes, the tax-based federal subsidy to SHI can be seen as an indirect measure of solidarity between PHI and SHI. Furthermore, in contrast to SHI contributions, PHI premiums for substitutive coverage of individuals are risk rated. Premiums vary with age and medical history at the time of underwriting. Unlike in SHI, separate premiums must be paid for spouses and children, making PHI especially attractive for single people or double-income couples.

3.3.3 *Pooling and allocation of funds*

ALLOCATION FROM COLLECTION AGENCIES TO POOLING AGENCIES

Sickness funds collect the contributions – both the employer's and the employee's part – directly from the employers or the mentioned public agencies, and transfer these to the central reallocation pool, usually on the same day. As part of the Strengthening Competition in SHI Act, this central reallocation pool (known as the *Gesundheitsfonds**) was introduced in 2009, fundamentally reorganizing the system for collecting and distributing SHI contributions. The central reallocation pool, which is administered by the Federal Office for Social Security, pools the SHI contributions centrally and subsequently reallocates them among the sickness funds according to a morbidity-based risk-adjustment scheme. As mentioned in Section 3.2 Sources of revenue and financial flows, the federal government subsidy to the sickness funds is also transferred to the *Gesundheitsfonds*.

ALLOCATING RESOURCES TO PURCHASERS

The SHI contributions collected in the central reallocation pool are distributed among the sickness funds according to a morbidity-based risk-adjustment-scheme (*morbiditätsorientierter Risikostrukturausgleich*; often abbreviated in German to "*Morbi-RSA*"). In place since January 2009, the scheme represents a further stage in the evolution of risk-adjustment in the German SHI system. The first such risk-adjustment scheme was introduced in 1994 and initially used only gender, age and invalidity status as risk adjusters (for more detail, see Busse & Blümel (2014)). In contrast, the morbidity-based scheme relies on direct measures of morbidity in addition to gender and age.

The implementation of the central reallocation pool introduced a new financing mechanism into the health care system that had immediate effects

* The German term "*Gesundheitsfonds*" was presumably chosen by policy-makers to make this far-reaching reform of the SHI system more palatable to the general public. In some of the literature, the term is unhelpfully translated into English as "health fund", which is equally vague. In the present volume, "*Gesundheitsfonds*" will be translated as "central reallocation pool" for the sake of clarity.

on the mode of operation of the risk-adjustment scheme. The risk-adjustment scheme does not correspond to income, since the contributions of all members are paid to the reallocation pool and therefore do not allow for the adjustment of disparities of personal income among contributing members. Moreover, financial compensation does not take place between the individual sickness funds, but each one of them receives its apportionment of the reallocation pool.

The introduction of a morbidity-based risk-adjustment scheme aimed to allocate resources more efficiently. Based on the Morbi-RSA, the sickness funds receive a basic flat-rate per insured person, equalling the expected average per capita expenditure. In 2019 the monthly flat rate was € 262. The sickness funds receive an age-/sex- surcharge or discount on the flat-rate to adjust payments; roughly 50% of the overall allocation are morbidity-based surcharges according to pre-existing illnesses to adjust for health care needs. According to the current risk structure reconciliation regulation (*Risikostruktur-Ausgleichsverordnung*), the Federal Office for Social Security, in cooperation with the scientific committee, defined 80 eligible diseases. Diseases are eligible if the average expenditures per insured suffering from this disease are higher than the average expenditures of all insured by at least 50%.

The recently passed Fair Competition among Sickness Funds Act (*Gesetz für einen fairen Kassenwettbewerb in der gesetzlichen Krankenversicherung*; February 2020) further develops the risk-adjustment scheme through: (1) expanding the 80 diseases considered so far to cover the full spectrum of diseases; (2) adding a regional component to the list of risk adjusters; (3) introducing a risk pool for high-cost cases; and (4) taking into account expenditures for prevention and individual discounts on pharmaceuticals.

BUDGETS

With the risk-adjusted transfers they receive from the central reallocation pool, sickness funds must cover all the expenses of insured members and their dependents, and thus carry full financial liability. The transfers do not represent fixed predetermined budgets; rather insured individuals' claims to benefits are independent of the amount transferred. If expenditure exceeds revenue in a given year, a sickness fund must levy supplementary contributions from its members.

Since the 1970s the main political goal in health policy has been to restrict sickness funds' expenditure to a level where it matches income (or – more precisely – to limit expenditure growth to the rate of growth of contributory income in order to keep contribution rates stable). To that end, sectoral budgets or spending caps were legally introduced at the end of the 1980s.

However, it is noteworthy that all these SHI "budgets" are on the providers' side, not the payers' side. While some budgets de facto also limit the expenditure of individual funds (for example, morbidity-based capitation payments to the regional physicians' associations for ambulatory care), others do not have – nor intend to have – that effect, since, for example, expenditure under a hospital budget or a pharmaceutical spending cap is divided between funds according to the actual utilization of their members.

The "budgets" are based on historical expenditure patterns and not on needs-based formulas. In order to constrain expenditure, growth rates were limited by law, or budgets and spending caps were based on actual expenditure in the previous year (often the year before the legislation, so as to avoid any changes after proposing or passing the law). Either way, regional differences in expenditure remained untouched. A shift to performance- or needs-based financing has only occurred with the introduction of DRGs in the hospital sector and morbidity-based criteria in the ambulatory care sector (see Section 3.7.1 Paying for health services).

3.3.4 *Purchasing and purchaser-provider relations*

Details for the provision of services and its payment are negotiated and defined at the corporatist level. In general, collective contracts are signed, i.e. representatives of the sickness funds conclude regional contracts with the Regional Associations of SHI Physicians and the Regional Associations of SHI Dentists, respectively; generally, there is no direct contractual relationship between the ambulatory care physicians or dentists and the sickness funds. For SHI, the conclusion of collective contracts is the predominant method of purchasing ambulatory services. In this case, the scope of services and, in principle, payment are equal for all providers in a region. In contrast, when concluding individual or "selective" contracts, sickness funds contract directly with health care providers according to §140a SGB V and do not use the route via their associations.

In 2003 the government had intended to introduce exclusive selective contracting for all specialist doctors and to continue collective contracting only with GPs. Those plans were finally discarded due to resistance by physicians. The SHI Modernization Act (2004) finally introduced GP-centred care models and models of integrated care as the only forms of selective contracting (see Section 5.4.3 Inpatient care). Sickness funds that participate in integrated care models are no longer bound to conclude collective contracts with the Regional Physicians' Association for those services that are covered by the integrated care project. The participation for insured persons is voluntary but if they do, they commit themselves to the physicians that are contracted partners of the integrated care model contract. The Strengthening Competition in SHI Act of 2007 widened the scope of action for selective contracting. Collective contracts have to be adjusted in respect to services covered by selective contracts, as well as for reimbursement to make sure there is no double financing. However, this is problematic since patients who participate in selective contracts mostly have higher morbidity profiles, and can result in sizeable reductions for collective contracts.

In the hospital sector collective contracts also prevail. The contract results automatically from the inclusion of a hospital in the state's hospital requirement plan. However, §109 SGB V allows the state associations of the individual sickness fund to conclude additional contracts with individual hospitals.

3.4 Out-of-pocket payments

According to OECD data, out-of-pocket (OOP) expenditures are lower in Germany (12.3% of total health expenditure) than in most other EU countries in 2018 (OECD, 2020d). According to data from the Federal Statistical Office, OOP expenditure as a share of total expenditure increased from 12.7% to 13.6% between 2000 and 2018. In terms of sectors, the largest category of OOP expenditure in 2018 was associated with inpatient long-term care (€ 14.5 billion), followed by pharmaceuticals (€ 10.4 billion), medical aids (€ 7.2 billion), dental care (€ 6.6 billion) and ambulatory long-term care (€ 5.5 billion). Overall, there has been a shift from co-payments for goods (especially pharmaceuticals and medical aids/devices) to those for long-term care services (inpatient and ambulatory) over the last few years. In 2018

almost one third (28%) of OOP expenditure was related to long-term care provided in inpatient facilities as long-term care insurance usually covers only part of the costs (see Section 5.8 Long-term care).

Co-payments made by those insured under SHI amounted to € 4.1 billion in 2018, which was only 8% of all OOP payments. Just over half of SHI co-payments (54%) were attributable to pharmaceutical prescriptions and medical aids/devices. Other relevant co-payment amounts were for treatment by allied health professionals (23%) and hospital treatment (17%). Since co-payments for physician and dentist visits in ambulatory care were abolished in 2012, there are no SHI co-payments for these services. The relative importance of cost-sharing (user charges) versus direct payments made by people insured under SHI for health goods and services outside the benefits basket is not known because the SHI only collects data on co-payments.

Germany shows moderate OOP spending and relatively low user charges. According to data from the EU Statistics on Income and Living Conditions (EU-SILC) for 2014, less than 4% of the population reported an unmet need for medical care, mental care or prescription medicines due to financial reasons, which indicates good financial protection. However, because of high cost-sharing for dental care, unmet need for dental care was higher, at 10.5% (Eurostat, 2020a).

3.4.1 *Cost sharing (user charges)*

Despite co-payments accounting for only a relatively small share (i.e. approximately 1%) of total health expenditure, or 2% of all SHI expenditure (including co-payments), public debate has focused more on co-payments than on other types of out-of-pocket spending. This is likely due to the fact that co-payments, and corresponding exemption mechanisms, have a long tradition in the German health care system, particularly for pharmaceuticals, where cost-sharing was introduced in 1923 and has existed ever since (Gericke et al., 2009). Decisions about the level of user charges and protection mechanisms are defined in §§61 and 62 SGB V. In the Health Care Reform Act (1989), cost-sharing was advocated for two purposes: to raise revenue – by reducing expenditure for dental care, physiotherapy and transportation and making patients liable for pharmaceutical costs above reference prices – and to reward "responsible behaviour" and good preventive

practice (e.g. dental treatment) with lower co-payments (for more details about the development of user charges between 1989 and 2004 see Busse & Blümel (2014)).

In 2004 co-payments and other out-of-pocket payments increased substantially for SHI-insured patients since the bulk of expected savings through the SHI Modernization Act (4% of current expenditures) was to be achieved by shifting costs to patients via increased co-payments or the exclusion of benefits (for example eye glasses, transport to ambulatory care and over-the-counter medications). Since 2004 the user charge for prescription pharmaceuticals and emergency or inpatient transportation has been 10% of the price with a minimum co-payment of € 5 and a maximum of € 10 per product. User charges for health care services provided by non-physicians, e.g. physiotherapy or home care, amount to 10% of the cost plus € 10 per prescription. Until the end of 2012 co-payments of € 10 per quarter also applied to the first contact at a physician's (not necessarily a GP) or dentist's office and when other physicians were seen without referral during the same quarter. This "practice fee" *(Praxisgebühr)* aimed at reducing the number of unnecessary physician visits in ambulatory care. However, studies found that the fee had not significantly reduced utilization since 2005 compared to the level before 2004, although the bureaucratic effort was enormous, as was resistance among the population and medical professionals, leading to its abolition in 2012.

Exemptions from co-payments are granted either to specific population sub-groups, to the poor or to people with substantial health care needs. Population sub-groups which have usually been exempt from user charges are children under 18 (except for dentures, orthodontic treatment and transportation) and women requiring maternity care. Furthermore, an SHI-insured person is eligible for exemption from user charges once more than 2% of their annual income has been spent on co-payments, or 1% of annual income for patients with severe chronic conditions. About 0.4% of all SHI insured people exceeded the 2% cap and 7.9% exceeded the 1% cap in 2018 exempting them from further co-payments (Bundesministerium für Gesundheit (BMG), 2020k). The exemption rules do not apply to benefits that are not covered by the SHI package, or to price differentials for reference-priced pharmaceuticals (see Section 5.6 Pharmaceutical care). Besides the SHI exemption mechanism, relief from income tax is granted for "extraordinary" out-of-pocket health care spending above a "reasonable" percentage of the annual household income (1% to 7%).

TABLE 3.3 User charges for health services

HEALTH SERVICE	TYPE OF USER CHARGE IN PLACE	EXEMPTIONS AND/ OR REDUCED RATES	CAP ON OOP SPENDING	OTHER PROTECTION MECHANISMS
Ambulatory primary and specialist care	None	n/a	n/a	n/a
Outpatient prescription drugs	• Co-insurance (10%; min. € 5, max. € 10) • Reference pricing	• Children and adolescents up to the age of 18 • Women needing maternity care		• Up to 2% of annual income (1% for patients with chronic conditions), but not for charges above reference prices or fixed subsidies
Inpatient stay	• Co-payment (€ 10/day)		• Up to 28 days/€ 280 per year	
Dental care	Formally no co-payments but patients must pay the difference where the provider charges over the standard price (extra-billing)			
Crowns and dentures	• Fixed subsidy	• Higher subsidy with proof of prevention		
Orthodontic treatment	• For children: Co-insurance (20%) • For adults: not covered	• Reduced cost-sharing for second and subsequent child		
Medical aids	• Co-insurance (10%; min. € 5, max. € 10)	• Children and adolescents up to the age of 18 • Maternity care		
Non-physician care (e.g. physiotherapy)	• Co-payment (€ 10) plus • Co-insurance (10%)	• Children and adolescents up to the age of 18 • Maternity care	• Up to 28 days/€ 280 per year for homecare	
Transportation	• Co-insurance (10%; min. € 5, max. € 10)			

Source: Authors' compilation

Note: n/a: not available

Dental care is subject to explicit cost-sharing in SHI. For instance, the costs of dental fillings exceeding the costs of standard care must be paid by the patient. Orthodontic treatments for adults over 18 are not covered by SHI (except in some specific cases). For children, 80% of costs for orthodontics are covered by SHI-funds, if the need for treatment is recognized by the sickness fund. If two children in the same family receive orthodontic treatment at the same time, cost-sharing is reduced to 10% for the second child and for further children. After the dentist confirms that the treatment has been finished, the

sickness funds pay back the co-payments made by the insured person (§29 SGB V). Regarding dentures and crowns, 60% of the costs of standard care are covered by SHI (this is called the "fixed subsidy"). Coverage can increase up to 75% if the insured persons pledge to keep their teeth healthy and prove that they have had annual dental medical checks over the last 10 years before treatment for dentures (§55 SGB V) (Gemeinsamer Bundesausschuss, 06.12.2019). If patients are burdened unreasonably by the costs for defined standard treatment for dentures, they are eligible for an increased fixed subsidy, i.e. standard treatment for dentures is fully paid by the sickness funds. Unreasonable burdens include: (1) a gross monthly income below a certain threshold; (2) being a welfare benefits recipient; and (3) recipients living in nursing homes or similar facilities paid by welfare benefits bodies.

3.4.2 *Direct payments*

Direct payments are made for services that are not covered by SHI. Benefits that have been legally excluded from SHI health insurance coverage include eye glasses, lifestyle medications, and all over-the-counter (OTC) medications with a few exceptions, which are defined by the Federal Joint Committee (see Section 2.7.4 Regulation and governance of pharmaceuticals). A list of "individual health services" (*individuelle Gesundheitsleistungen* – IGeL) presents a selection of "services deliverable on demand for patients" from the Catalogue of Tariffs for Physicians. Services presented there may be (proactively) offered to patients paying OOP in addition to the comprehensive range of SHI benefits. However, the services may only be provided as a supplement to the SHI catalogue of benefits (see Section 3.7 Payment mechanisms). The list of individual services also includes those whose diagnostic and therapeutic benefits are questionable or risky (e.g. ozone therapy). They also include insufficiently tested methods whose risks have so far not been investigated at all or not sufficiently and thus are not calculable.

3.4.3 *Informal payments*

The German health care system is strongly regulated and informal payments do not play an essential role. Long-term care is one sector in which informal

services and payments are increasing. However, there is no valid data to assess their scope and relevance. Having said that, in practice long-term care in Germany is increasingly provided by so called "live-ins" or as "24-hour care" by migrant workers, predominantly from Central and Eastern Europe. In a representative nationwide survey around 4% of households with a person in need of care responded that they received assistance or care provided by "live-ins". Applied to the total number of persons receiving LTC benefits, it could be estimated that around 100 000 households with persons in need of care (care grade II to care grade V) engage "live-ins" to provide such services (Bundesministerium für Gesundheit (BMG), 2019k). This informal (and often grey) market is promoted through private social networks or professional intermediary companies. Financing relies on the underlying legal model, ranging from grey market labour with informal financing from the long-term care client to an official employer-employee relationship based on the legal prerequisites of German labour law (Rossow & Leiber, 2019).

3.5 Voluntary (private) health insurance

Private health insurance (PHI) has two markets in Germany: (1) to cover fully a portion of the population (substitutive private health insurance) and (2) to offer supplementary and complementary insurance for SHI-insured people. Both types are offered by 42 private health insurers, united in the Association of Private Health Insurance Companies. In terms of premium turnover, the full-cover segment is three times larger than the supplementary/complementary insurance segment for SHI-insurees (in 2018: € 25.9 billion and € 8.7 billion respectively). Between 2008 and 2018 total revenues increased from € 30.3 billion to € 39.8 billion (Verband der privaten Krankenversicherung, 2019b). According to the Federal Statistical Office, in 2018 substitutive PHI accounted for 6.9% of total health expenditure and supplementary/complementary PHI made up 1.4%.

3.5.1 *Substitutive (full-cover) private health insurance*

In 2018 there were 8.7 million people with full PHI coverage, representing 10.8% of the population (Verband der privaten Krankenversicherung, 2019b).

The vast majority of people with full-cover private health insurance consist of three main groups:

- active and retired permanent public employees and civil servants such as teachers, university professors, employees in ministries, etc., who are excluded de facto from SHI as they are reimbursed by the government for at least 50% of their private health care bills and purchase private insurance to cover the remainder (this group accounts for half of those with PHI)*;
- self-employed people who are excluded from SHI unless they have been a member previously; and
- employees whose earnings exceed or exceeded the opt-out threshold: employees who were initially below the threshold but then exceed it as a result of an increase in wages may remain in the SHI voluntarily. Employees whose occupational income exceeds the threshold from the start of their first gainful employment may have voluntary SHI coverage if they apply within three months. This option does not apply to civil servants and soldiers.

The number of substitutive PHI policies steadily increased until 2011. Since then the trend has changed and private insurers registered around 240 000 fewer insured people in 2018 than in 2011. At the same time, more people switched from PHI to SHI than vice versa. This is partially due to the increasing number of employees in jobs that are subject to social security contributions with an income below the opt-out threshold. Another reason is the increases in private insurance premiums in recent years, so that they are no longer affordable for an increasing number of those who have this insurance – thus creating an incentive to switch to mandatory SHI coverage.

Private health insurers are forced by law to set aside savings for old age from the insurance premiums when the insured are young (i.e. whereas SHI is financed on a pay-as-you-go basis, financing of PHI is based on capital

* Four states have recently introduced 50% reimbursement also for SHI contributions. People who now receive civil service status can make a one-off (and irrevocable) decision on whether they want to take out SHI or PHI. In this case, the employer (government) also pays 50% of SHI contributions. So far, the new regulation has been adopted in particular by lower civil servant grades and insured people with children.

cover). Because premiums can still rise with age, and privately insured people are not permitted to enter SHI in ordinary circumstances, private insurers are obliged to offer an insurance policy with the same benefits as SHI at a premium that is not higher than the average maximum contribution to sickness funds. People who joined PHI before 1 January 2009 and have had continuous private coverage for at least 10 years and are at least 65 years old (or 55 with income under the SHI threshold) can opt for the so called "standard tariff", which guarantees that insurance premiums are not higher than the maximum SHI contribution. The regulation for this tariff entails that benefits and chargeable prices are restricted (or extended) to the basket of statutory health insurance. Furthermore, private health insurers are legally required to offer a "basic tariff" which provides equivalent benefits to those in the SHI package at a premium that may not exceed the highest contribution in the SHI system (approximately € 730 per month in 2020). Taking out or switching to a basic tariff policy is only possible for new PHI-insured, for insurees over 55 years of age, and for those in need. The premium is calculated based only on the age of the insured; health status plays no role in this regard.

Fully privately insured patients who do not have the basic tariff usually enjoy benefits equal to or better than those covered by SHI. This depends, however, on the insurance package chosen; e.g. it is possible not to cover dental care. In the PHI market premiums vary with age and medical history at the time of underwriting. Unlike in SHI, separate premiums have to be paid for spouses and children, making private health insurance especially attractive for single people or double-income couples. Unlike SHI insured, privately insured people generally have to pay providers directly and are reimbursed by their insurer (*Kostenerstattungsprinzip*). While a price list for privately delivered medical services (*Gebührenordnung für Ärzte – GOÄ*) exists as an ordinance issued by the Federal Ministry of Health, physicians usually charge more – by a factor of 1.7 or 2.3 (which are the maximum levels for reimbursement by the government and by most private health insurers for technical and personal services, respectively) or even more (see Section 3.7.1 Paying for health services).

3.5.2 *Supplementary and complementary private health insurance*

The second market for private health insurers is supplementary and complementary insurance for those insured under SHI. While supplementary insurance covers top-up amenities like hospital rooms with one or two beds or treatment by the head-of-service, complementary health insurance covers co-payments for benefits that are not – or not fully – covered by the insuree's main insurer (e.g. dental prosthesis).

Since the SHI Modernization Act (2004), sickness funds have been allowed to cooperate with private insurers to offer supplementary and complementary policies that provide benefits that go beyond the standard SHI benefits basket. An increasingly large share of the population is choosing to take out such policies. In 2018, 20.1 million supplementary or complementary tariffs were taken out by SHI insurees, which represents a 2.4% increase over the previous year (and greater than a three-fold increase compared to the 6.2 million policies in 2004). Of these, dental care tariffs (16 million; +2.2%) were the most frequently chosen option, followed by ambulatory care (7.9 million; -1.0%) and hospital care (6.2 million; +1.1%) tariffs. Complementary and supplementary policies that were chosen by SHI- and PHI-insured alike include daily allowances while in hospital (7.7 million in 2018), sick pay insurance (3.6 million policies), and supplementary long-term care insurance (2.8 million) (Verband der privaten Krankenversicherung, 2019b).

3.6 Other financing

Other sources of financing include parallel health systems, such as the financing of health services for soldiers through the Ministry of Defence. External sources, such as the EU structural funds "Third Health Programme (2014–2020)", aim to support cooperation among EU countries and develop EU health activities, e.g. in the area of tobacco control and mental health (Bundesministerium für Gesundheit (BMG), 2020b; European Commission, 2020b). Occupational health services for employees include all measures financed by the employer to reduce accident and health risks in the workplace and to provide occupational medical examinations according to §3 of the Occupational Safety and Health Act (*Arbeitsschutzgesetz*) (Bundesministerium für Arbeit und Soziales (BMAS), 2019).

3.7 Payment mechanisms

3.7.1 *Paying for health services*

Table 3.4 outlines the various provider payment mechanisms employed within the health system. The rest of this section provides more detail of the payment methods and processes in various sub-sectors.

TABLE 3.4 Provider payment mechanisms

PAYERS/ PROVIDERS	SHI FUNDS	PRIVATE/ VOLUNTARY HEALTH INSURERS	REGIONAL MINISTRY OF HEALTH/HEALTH SERVICE	LOCAL HEALTH AUTHORITY
GPs	Contact capitation + FFS (EBM)	FFS (GOÄ)	-	-
Ambulatory specialists	Contact capitation + FFS (EBM)	FFS (GOÄ)	-	-
Other ambulatory provision	FFS	FFS	-	-
Acute hospitals	DRG	DRG	GB	-
Other hospitals (psychiatric)	PEPP	PEPP	-	-
Hospital outpatient	Mostly contact capitation or FFS	FFS	-	-
Dentists	FFS	FFS	-	-
Pharmacies	Margin + FFS	Margin	-	-
Public health services	-	-	GB + S	GB + S

Source: Authors' compilation

Notes: EBM: Einheitlicher Bewertungsmaßstab; GOÄ: Gebührenordnung für Ärzte; FFS: Fee-for-service; S: Salary; DRG: Diagnostic-Related Groups (case payment); GB: Global Budget; PEPP: Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik (see Section 3.7.1 Paying for health services)

PUBLIC HEALTH SERVICES

Public health services mainly take place in a community setting. The multitude of tasks are performed by separate departments in approximately 375 state agencies, as public health services are a state responsibility and state laws regulate details of provision and scope. The majority of public health services are provided at the municipal level (see Section 5.1 Public health).

State agencies responsible for public health services receive the vast majority of available funding via fixed budgets from the states, and employees are salaried. On a smaller scale, fee-for-services is partly also relevant for e.g. issuing professional opinions and registering health professionals.

PRIMARY CARE AND SPECIALIZED AMBULATORY CARE

Services in ambulatory SHI care provided by office-based physicians (GPs and specialists), dentists, pharmacists, midwives and many other allied health professionals are subject to predetermined price schemes. The most strictly regulated and sophisticated reimbursement catalogues have been developed for physicians and dentists. There are two fee schedules per profession, one for SHI services and one for private treatments. Other price schemes, such as those of the statutory accident funds, are based in large part on these two fee schedules. The following sub-sections provide details for physicians (in primary and specialized care, including psychotherapists) but these are quite similar for dentists.

Payment of physicians in statutory health insurance settings

The payment of physicians by SHI is not straightforward but is subject to a process involving two major steps. First, the sickness funds make total payments to the regional physicians' associations for the remuneration of all SHI-affiliated doctors, in lieu of paying the doctors directly. The only exception is the possibility to conclude selective contracts in the context of integrated care (see Sections 3.3.4 Purchasing and purchaser-provider relations and 5.4.3 Inpatient care). Second, the regional physicians' associations distribute these total payments among SHI-accredited physicians according to a "Uniform Value Scale" (*Einheitlicher Bewertungsmaßstab – EBM*).

Overall remuneration

The overall remuneration has three components. The first core component is a morbidity-based overall remuneration, which arises from the treatment requirements of the patients, a regional orientation value and the number of insured people per sickness fund. Since 2009 the amount of

overall remuneration of care provided by SHI-affiliated physicians has been negotiated on an annual basis between the Regional Associations of SHI Physicians and the regional associations of the sickness funds. SHI physicians' remuneration remains subject to a ceiling, even though allocation to the individual funds is on the basis of the treatment needs of their members in comparison with the amount in the preceding period. The second component is the sickness funds' ability to increase payments to overall remuneration if an unforeseeable need for provision of treatment arises (e.g. an epidemic). The third component is remuneration of individual services that the sickness funds are required to pay at fixed prices over and above the morbidity-based overall remuneration. These eligible services, such as immunizations, screening tests or ambulatory surgery, are not subject to volume ceilings.

Payment of fees

In a second step, the Regional Associations of SHI Physicians share the overall remuneration among their members in accordance with the national Uniform Value Scale and the "fee allocation scales" agreed at regional level with the sickness funds in the individual "fee allocation contracts". All services that can be provided by physicians for SHI remuneration are listed in the Uniform Value Scale. While the coverage decision is made by the Subcommittee on Method Evaluation of the Federal Joint Committee (see Section 2.7.3 Regulation of services and goods), a separate joint committee at the federal level, the Valuation Committee, is responsible for the Uniform Value Scale. The Uniform Value Scale describes the various services that can be charged by SHI physicians (§87 SGB V) and therefore performs the function of a benefit catalogue and is binding for all practising physicians and for the ambulatory care of all those insured through the SHI system.

Services are expressed not in monetary form but as points in the Uniform Value Scale. SHI physicians report their total number of points for services provided to their regional association at the end of each quarter. Since January 2009 a practice-based volume of standard services has been calculated for each SHI physician and quarter. The volumes of standard services set the volume of services that a physician can bill in a defined period and that are payable at a pre-agreed fixed monetary value per point (Euro Fee Code) (§87

SGB V). The physician is notified of the prospective volume of standard services at the beginning of each quarter. The volumes of standard services differ from the expenditure ceilings that previously applied in that the care requirements of the insured are taken into consideration with regard not only to the specific group of physicians but also to the individual practice. A volume of standard services is calculated by multiplying the case rate specific to the physicians' group by the number of cases of the physician and the morbidity-based weighting factor. The number of cases that a physician can cover is subject to a quantity limit in advance. Cases that are above 50% of the specialist group average are only included in the calculation of the volume of standard services in a graduated form. If a physician exceeds the volume of standard services, this has a regressive effect on the amount that he or she receives for the service in question.

Since 2010 the extension of specialist physician services has not been at the expense of family physicians and vice versa. Nearly all services paid for out of limited morbidity-based overall remuneration are subject to a volume ceiling. Qualification-based additional volumes steer the volume of what are known as "discretionary services", such as acupuncture and urgent house calls, for nearly all groups of physicians. Distribution volumes specific to groups of physicians for volumes of standard services and qualification-based additional volumes aim to allocate fees as equitably as possible. The Regional Association of SHI Physicians and Sickness Funds have leeway at the regional level to decide the services for which they will form qualification-based additional volumes and how they calculate payment of these services.

Each SHI physician is allotted a volume per quarter that consists of the volume of standard services allocated to the medical practice and any qualification-based additional volume allocated. It is based on the volume of services of the practice in the same quarter of the preceding year. The volume is a quantity limit up to which a practice receives payment for its services at the prices of the Uniform Value Scale. Volumes of standard services or qualification-based additional volume services are remunerated at a graduated price. The amount of the graduated price depends upon how many standard services and qualification-based additional volume services all specialist physicians and family physicians have billed beyond these limits: 2% of the volume allocable to specialists and family physicians is set aside for payment of these services. There are

flexible offsetting possibilities between the volume of standard services and the qualification-based additional volume. If a practice does not exhaust its volume of standard services, correspondingly more qualification-based additional volume services can be billed at the prices set out in the Euro Fee Code, and vice versa.

Size of fees

The income of SHI-affiliated physicians is comparatively high, partly as they have further sources of income in addition to that from SHI, in particular income from treating privately insured patients and direct patient payments. According to the Federal Association of SHI Physicians, physicians achieved an average practice turnover per practice owner of € 325 450 in 2017, with an average annual surplus of € 168 770 per practice owner. The average practice turnover per GP was € 339 164 in 2017. The highest turnover is received by internists and radiologists while the turnover of psychotherapists is comparatively low (Zentralinstitut für die kassenärztliche Versorgung in Deutschland (ZI), 2019). Regarding revenues, it should be remembered that they do not reflect the net earnings of a medical practice. To see these, labour costs, expenditure on materials and outside laboratory work as well as expenditure on rent/leasing and other expenses have to be deducted. According to OECD data, the annual income of a self-employed GP in Germany was the equivalent of US$ 153 786 in 2015, while that of a self-employed specialist physician was US$ 187 858 on average (OECD, 2020d). Therefore, the income of physicians in independent practice was between three and four times greater than the national average annual income of US$ 48 035 in 2015 or US$ 49 813 in 2018 (OECD, 2020a).

Payment in private delivery settings

For privately paying patients, payment of health professionals is organized differently. For physicians and dentists, the catalogues for private tariffs are valid in ambulatory as well as inpatient care, and for patients paying out of pocket as well as those using PHI. They are based on fee-for-service and are determined by the Federal Ministry of Health, which is advised by the professional bodies concerned. In the Catalogue of Tariffs for Physicians, each

procedure is given a tariff number and a certain number of points, which – multiplied with a point value of € 0.058 287 3 – is the single charge rate. In addition, the maximum charge rate is indicated, which is 3.5-fold higher than the single rate, but for most services physicians charge a 2.3-fold rate and for certain services they may charge only a 1.7-fold rate.

Furthermore, the Catalogue lists the requirements for reimbursement, such as the duration, performance, documentation or limits concerning the combination of several tariff numbers. However, the Catalogue does not reflect daily practice very well. Many services are subsumed under more general items, such as counselling on preventive self-medication and lifestyle (No. 34; single charge rate: € 17.49 and 2.3-fold rate: € 40.23 in the Catalogue of Tariffs for Physicians). The list of "individual health services" presents a selection of "services deliverable on demand for patients" from the Catalogue of Tariffs for Physicians. Services presented there may be (proactively) offered to patients paying out-of-pocket in addition to the comprehensive range of SHI benefits. However, the services may only be provided as a supplement to the SHI catalogue of benefits. The list of individual health services contains e.g. services that make sense medically in individual cases but do not number among the responsibilities of SHI (e.g. special immunizations for vacation travel).

The prices for the provision of services in private settings are not set uniformly in most of the other health service professions. However, the associations representing the individual health service professions, for example physiotherapists or nonmedical practitioners, make recommendations on fees that patients and individual service providers can use as a reference and that can serve as a basis if different provisions are not contained in the treatment contract.

Remuneration for ambulatory physician care is usually higher for PHI patients (under GOÄ) than for SHI patients (under EBM). This leads to inequalities in the form of the physicians' preferred treatment of PHI patients (see Section 7.2 Accessibility). In 2018 the Scientific Commission for a modern remuneration system (*Wissenschaftliche Kommission für ein modernes Vergütungssystem – KOMV*) was founded with the aim of proposing reform plans for the remuneration system in ambulatory care. Recommendations were presented in January 2020, such as the "partial harmonization". This includes the uniform definition of medical services and their relative cost assessment. However, prices should be negotiated separately for SHI and PHI further

on (Bundesministerium für Gesundheit (BMG), 2020h; Wissenschaftliche Kommission für ein modernes Vergütungssystem (KOMV), 2019).

INPATIENT CARE

Since the Hospital Financing Act of 1972, hospitals have been financed through two different sources: "dual financing" means that investments are financed through the states while operating costs are financed through the sickness funds, private health insurers and self-pay patients via remunerations for hospital services (for more details on hospital investment see Section 4.1.1 Infrastructure, capital stock and investments). Sickness funds (and others) finance most operating costs, including all costs for medical goods and personnel costs. They also finance the replacement of assets with an average economic life of up to three years, or maintenance and repair costs. Financing of operating costs is the subject of the negotiations between the individual hospitals and the sickness funds.

The German hospital sector has undergone substantial changes since 1993, particularly through the introduction of budgets and prospective payment mechanisms, and the possibility of making a profit or a loss (abolition of the (prime) cost-covering principle), as well as extended opportunities to provide ambulatory treatment. The introduction of a payment system based on Diagnosis-Related Groups (DRGs) was the most important reform in the acute care hospital sector since the introduction of dual hospital financing in 1972. The SHI Reform Act (2000) obliged the self-governing bodies (the German Hospital Federation and the associations of the statutory sickness funds and private health insurers) to select a universal, performance-related prospective case fee payment system that takes into account clinical severity (case-mix) based on DRGs. DRGs are meant to cover all operating costs for personnel and treatment, as well as board and accommodation. Reimbursement via DRGs is applied for all inpatient services (except psychiatry) in acute care hospitals and covers all patients and all payers.

The staged introduction represented an innovative approach to policy implementation, which has been characterized as a "learning spiral", outlining long-term roles, objectives and timeframes but allowing governmental actors and corporatist organizations within the self-governance of SHI to

issue and refine regulations and to further develop the German Diagnosis-Related Groups (G-DRG) system on a continuous basis. To a hitherto unseen degree, the Federal Ministry of Health was given – and initially indeed carried out – authority to decide on required tasks if self-governing corporatist bodies did not fulfil the tasks delegated to them by law within the defined time schedule.

The self-governing bodies opted for the Australian Refined DRG system 4.1 in June 2000, but could not come to a consensus on the basic characteristics for the future DRG system, which were subsequently defined by the Federal Ministry of Health through the Case Fees Ordinance (based on the Case Fees Act). The Case Fees Act (2002) and the 1st Case Fees Amendment Act (2003) determined the steps required for the gradual introduction of the DRG-based payment system and a phased withdrawal of the mixed payment system (convergence phase). Thereby, hospitals were given the opportunity to adjust to the transition from individual budgets based on historical expenditures to a uniform price system at the state level. The full implementation of the DRG-only price system was planned for 2007 but was postponed to 2009 by the 2nd Case Fees Amendment Act.

In 2010 the uniform price system at the state level became effective. Annual hospital budgets are negotiated between individual hospitals and sickness funds and deviations from the agreed budget are partially compensated. If the actual hospital revenue in one year exceeds the agreed hospital revenue budget, the hospital has to pay back 65% of the additional revenue (while in the opposite case, i.e. if actual revenue is less than agreed, it will receive 20% of the shortfall).

The G-DRG system represents a patient classification system. The system unambiguously assigns treatment cases to clinically defined groups (i.e. DRGs) that are distinguished by comparable treatment costs. In the G-DRG system, assignment of treatment cases to a DRG is based on a grouping algorithm using the hospital discharge dataset as a basis for a variety of criteria: principal diagnosis, secondary diagnoses, medical procedures, patient characteristics (gender, age, weight of newborn children), mode of admission, discharge disposition (e.g. death) and length of stay. Due to ongoing diversification, the number of DRGs increased over the Australian version to 824 in 2004 and to 1292 in 2020. Costs for certain cost-intensive services or expensive drugs are additionally reimbursed via supplementary fees. The precise definition of the individual DRGs is set out in the most

current version of the DRG-definition handbook. Reimbursements for costs that are not covered by DRGs (e.g. new diagnostic or therapeutic measures) can be negotiated between hospitals and sickness funds.

The cost weights for use in the G-DRG system are calculated based on hospital data. The German National Institute for the Reimbursement of Hospitals (*InEK*), which is funded by the self-governing bodies, provides the organizational structure to maintain and further develop the G-DRG reimbursement system and is responsible for calculating cost weights. To derive DRG classifications and cost weights, InEK relies on case-based cost data, which are collected by a sample of German hospitals. Besides that, each German hospital is required to provide InEK with hospital-related structural data (e.g. the hospital's ownership, number of beds, number of nursing personnel and costs for nursing education) and case-related claims data annually.

Recently, a fundamental alteration to the G-DRG system was introduced. Because of nursing staff reductions in hospitals, which were observed during the years after the introduction of the G-DRG system, the Nursing Staff Empowerment Act (2019) instructed the self-governing bodies to exclude the costs for nursing personnel from the DRG case fee remuneration. Starting in 2020, individual costs of nursing staff in acute care hospitals are fully covered by the sickness funds, while all other operating cost are covered by DRGs.

During the implementation of the G-DRG system for acute care hospital services, the remuneration for psychiatric and psychosomatic services based on standard per diem charges remained unchanged. In 2009 the Hospital Financing Reform Act instructed the self-governing bodies to develop a new remuneration system for psychiatric and psychosomatic hospital treatments. The legislative framework for the new system is regulated by the Psychiatry Remuneration Act, which came into force in 2013.

As the self-governing bodies could not come to a consensus on the basic characteristics for the psychiatric and psychosomatic reimbursement system, the Federal Ministry of Health initially set a framework for the so-called PEPP system (*Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik – PEPP*), which is now being refined by the self-governing bodies. The PEPP system represents a patient classification system for day-based payments and covers inpatient as well as outpatient hospital services. Treatment cases are assigned to clinically defined groups with comparable

costs (i.e. PEPPs) based on diagnoses and procedures. The PEPP system in 2020 comprises 84 PEPP groups. Costs for certain special services or expensive drugs are additionally reimbursed via supplementary fees. As for the DRG system, InEK is in charge of calculating PEPP cost weights based on hospital data.

Until 2017 hospitals could implement reimbursement via PEPPs voluntarily. Since 2018 the application of the PEPP system has been mandatory for all hospitals providing psychiatric and psychosomatic services. The transition from individual budgets based on historical expenditures to a uniform price system at the state level is planned to be completed in 2024.

PHARMACEUTICAL CARE

The financing of pharmaceutical care differs between the inpatient and the ambulatory sector, and between over-the-counter and prescription-only pharmaceuticals (see Sections 5.6 Pharmaceutical care and 2.7.4 Regulation and governance of pharmaceuticals). Pharmaceuticals in inpatient care are included in the DRG system, and additional charges (*Zusatzentgelte*) can be levied in addition to the DRG-based reimbursement only for some expensive drugs. Pharmaceuticals in ambulatory care are provided by pharmacies. The remuneration of pharmacies is regulated in the "Pharmaceutical Price Ordinance for Prescription-only Pharmaceuticals" (*AMPreisV*), which applies to the entire prescription-only market independent of the source of payment. It applies to human and animal drugs and to community pharmacies, but not to institutional pharmacies or to vaccines, blood replacement and dialysis-related drugs, for which sickness funds negotiate prices with manufacturers. Based on §35 SGB V, the reference price system establishes an upper limit for sickness fund reimbursements (see Section 2.7.4 Regulation and governance of pharmaceuticals). The Federal Association of Sickness Funds does the actual setting of reference prices for drugs with the same or similar substances or with comparable efficacy. Reference prices mean that sickness funds only reimburse pharmacies up to a predefined ceiling and patients pay the difference between the reference price and the market price. Pharmaceuticals that are at least 30% below the reference price are exempted from co-payments. For pharmaceuticals with additional benefit, according to the Federal Joint Committee, the Federal Association of Sickness Funds

negotiates a reimbursement amount as a discounted price at which the relevant pharmaceutical company has to sell the product.

For prescription-only medicines, the sickness funds pay pharmacists through a flat-rate payment of € 8.35 plus € 0.21 for the Pharmacy Emergency Service plus a fixed margin of 3% (from the manufacturer's price). Sickness funds receive a discount (*Apothekenabschlag*) of € 1.77 per dispensed prescription-only drug from the pharmacies, if the sickness funds pay the respective pharmacy within 10 days. The SHI Modernization Act (2004) set cost-sharing of prescribed drugs to 10% (minimum € 5 (but not exceeding the actual price), maximum € 10 per pack). For non-prescription pharmaceuticals, pharmacies can freely determine prices. Exempt from this rule are pharmaceuticals that, in principle, do not require a prescription but for which, for certain indications, physicians may issue prescriptions which will then be paid by the sickness fund. OTC pharmaceuticals are paid out of pocket by individuals, and reimbursement by sickness funds is only possible for children under the age of 12.

3.7.2 *Paying health workers*

Prices for services provided by physicians, dentists, pharmacists, midwives and other health professionals are set by fee catalogues. Physicians and other health professionals working in hospitals or institutions for nursing care or rehabilitation are paid by salaries. Public and not-for-profit providers usually pay public tariffs, while for-profit providers may pay lower or higher salaries or additional payments. The last pay structure survey conducted by the Federal Statistics Office in 2014 showed that the gross annual pay of a physician in full-time employment was at that time € 80 508 on average, including € 4 114 in the form of additional payments such as Christmas and holiday pay or performance bonuses (Statistisches Bundesamt, 2016). Since then, however, wages for physicians have increased noticeably.

4

Physical and human resources

- Germany has the second highest number of acute beds – 6 per 1000 population – in the EU. Since 2000 there has been a substantial shift in the provision of inpatient care, reflected by the decrease in the numbers of curative (or acute) hospital and rehabilitative care beds and the simultaneous increase in psychiatric care beds and beds in nursing and residential care.
- There is a dense network of hospitals, with on average one hospital per 68 000 population, which ensures that there is a high level of availability of inpatient care. Virtually everyone in Germany can reach an acute care hospital within 30 minutes by car; in urban areas 90% of people can do so within 15 minutes.
- Discrepancies in hospital density persist between states, which are responsible for capital investment and hospital planning. In a variety of states, however, there has been a decrease in capital investment over the past 20 years. In 2017 only around half of the estimated investment needs were met in the inpatient sector. Hospitals attempt to fill this investment gap through high activity levels and reimbursement of services by the sickness funds or by delaying renovations.
- The introduction of an electronic health card and a secure data exchange network among providers is picking up speed. Since 2015 the use of electronic health cards has been compulsory for insurees to be entitled to SHI benefits, and the basic roll-out of

card readers and other technical equipment in physician, dentist and psychotherapist practices was completed in July 2019. However, operational features, such as storing emergency data, electronic patient files and electronic medication plans, are still in the process of implementation.

- Health care is an important employment sector in Germany, with almost 5.7 million people working in the health sector, accounting for 12.3% of total employment. With an average of 431 practising physicians and 1322 practising nurses per 100 000 population, Germany's health workforce in these two professions was well above the EU averages in 2018. But despite strong increases in the numbers of all health professionals over the last two decades, in 2017 the Ministry of Labour reported a critical shortage of health workers, particularly for physicians, dentists, nurses, emergency care staff and midwives.

4.1 Physical resources

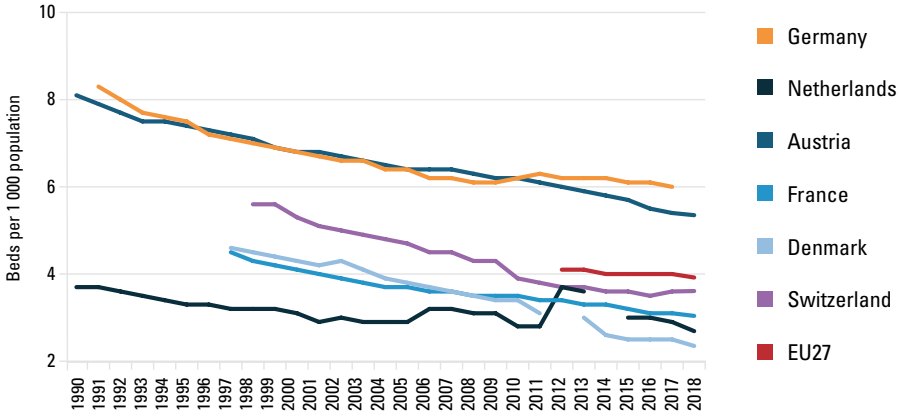
4.1.1 *Infrastructure, capital stock and investments*

INFRASTRUCTURE

By international standards, the German inpatient care sector is large and varied. In 2017 Germany had 6.02 acute care beds per 1000 population, which is second highest in the EU after Bulgaria. Although acute hospital capacities have been reduced since 2000, the number of acute hospital beds is considerably higher than in neighbouring countries and almost 65% higher than the EU 28 average (Figure 4.1). This is partly due to a higher starting point in acute care bed capacities, and also due to a more pronounced decrease in other countries.

Table 4.1 shows a substantial shift in the provision of inpatient care: the numbers of curative (or acute) hospital and rehabilitative care beds have decreased simultaneously (by more than 60 000 beds and 24 600 beds respectively between 2000 and 2017). At the same time, psychiatric care beds increased by almost 20% (or 17 400 beds) (see Section 5.11 Mental health care), while the number of beds in nursing and residential care has grown by 40% or 307 000 beds respectively (Statistisches Bundesamt, 2018b).

FIGURE 4.1 Hospital beds in acute hospitals per 1000 population in Germany and selected countries, 1990–2018 or latest available year



Source: Eurostat, 2020c

TABLE 4.1 Trends in the number of beds per 1000 population by type, 2000–2017 (selected years)

	2000	2010	2011	2012	2013	2014	2015	2016	2017	%-CHANGE 2000–2017
Curative care beds (HP.1)	6.81	6.21	6.25	6.24	6.21	6.18	6.11	6.06	6.02	-11.6%
Of which: Psychiatric care beds in hospitals (HP.1)	1.07	1.19	1.22	1.25	1.26	1.27	1.27	1.28	1.28	+19.6%
Rehabilitative care beds in hospitals (HP.1)	2.31	2.12	2.12	2.10	2.06	2.05	2.02	2.00	1.99	-13.8%
Available beds in nursing and residential care (HP.2)[a]	0.82*	n/a	1.09	n/a	1.12	n/a	1.14	n/a	1.15	+40.2%

Sources: Eurostat, 2020c; [a] Eurostat, 2020d

Notes: n/a: not available; * data refer to 2001; the primary source for nursing and residential care is biannual statistics. HP: Classification of health care providers according to OECD/Eurostat/WHO, 2017

Since hospital planning is a responsibility of the states, approaches to planning and investment vary widely, and bed densities differ among states: Bremen and Thuringia recorded more than 7 beds, while Baden-Wurttemberg only had 5 beds per 1000 population in 2018. Between 1991 and 2018 Berlin, which initially had the highest bed density in the country, halved it to 5.7 per 1000 population and was below the nationwide average in 2018. Hamburg and Bremen, which are both city states like Berlin, still have higher than average capacities, despite substantial reductions of 24% and 27% respectively since 1991. In general, there is a high availability of inpatient care, although there are discrepancies between urban and rural areas and general and specialized care (Box 4.1).

BOX 4.1 Distribution of health facilities throughout Germany, 2016

Germany has a dense network of hospitals with on average, one hospital per 68 000 population, which is reflected by a high overall availability of inpatient care. In general, availability is better in urban areas: 90.4% of the urban population can reach an acute care hospital within 15 minutes by car compared to only two thirds of the rural population in 2016. Practically all (99%) of the urban and rural population can reach a hospital within 30 minutes (Statistische Ämter des Bundes und der Länder, 2019).

There is a wide variation of hospital density by municipalities: over 200 municipalities, mostly in urbanized regions, have a high concentration of hospital beds of more than 10 beds per 1000 population (Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR), 2019). On the other hand, there are over 700 municipalities with less than 5 acute hospital beds per 1000 population.

A similar analysis is available for specialized inpatient care, which can be (slightly) harder to reach. For example, 69% of the urban population and 35.6% of the rural population can reach a psychiatric hospital within 15 minutes by car; this rises to 98% of the urban population and 80.8% of the rural population within 30 minutes (Statistische Ämter des Bundes und der Länder, 2019). Other studies report on a higher availability of specialized inpatient care. For instance, breast cancer care in certified centres was available, on average, for 84% of women aged 25 or older within 30 minutes by car in 2013. However, it should be noted that the majority of breast care centres were found in urban regions with a consequent higher availability, and only 10% in rural areas (Lewers & Geraedts, 2015).

CURRENT CAPITAL STOCK

In terms of classifying hospital facilities, in Germany there is a legal distinction between "*hospitals*" and "*institutions for prevention and rehabilitation*" (§107 SGB V)*. Both groups can be differentiated into sub-groups according to their ownership and/or their legal status. Furthermore, the Federal Statistical Office categorizes the *hospitals* into "general" (i.e. acute hospitals) and "other", with the "other" category comprising:

1. hospitals with exclusively psychiatric, psychotherapeutic and/or neurological and/or geriatric beds (hereinafter abbreviated as "psychiatric hospitals") and
2. day surgery hospitals which do not have any "beds" as defined by the statute.

The Social Code Book V, on the other hand, categorizes hospitals according to their SHI contractual status into three groups (§108 SGB V, see below), to which a fourth group should be added – "hospitals without SHI contracts". Institutions for prevention and rehabilitation are only distinguished into those "with" and those "without" SHI contracts.

The type and status of an institution is decisive for the funding of investments and services. Table 4.2 provides an overview, including the numbers for institutions and beds in 2017.

Hospitals (general/acute and other)

In 2018 there were a total of 1925 *hospitals* providing 498 192 beds. Of these, 552 *hospitals* were publicly owned, 650 were private not-for-profit and 723 private for-profit hospitals, with bed shares of 48%, 33% and 19% respectively. Privately owned *hospitals* have, on average, 132 beds compared to an average of 433 beds in publicly owned hospitals. The number of publicly owned *hospitals* (general and "other") almost halved between 1991 and 2018, whereas the number of private hospitals doubled over this period (Statistisches Bundesamt, 2020g). Moreover, there are vast regional differences

* International comparisons often subsume these two groups under "available hospital beds" (HP.1), which should be taken into consideration when interpreting the data.

regarding private for-profit ownership of hospitals: in Hamburg 41 out of 56 hospitals (73%) were under private ownership in 2018, while in Berlin and Mecklenburg-Western Pomerania more than half of the hospitals were privately owned. On the other hand, Saarland had only 0.6% privately owned hospitals in 2018. The 1585 acute care hospitals provide the overwhelming share of hospital beds (91%). The 279 psychiatric hospitals had a total of 46 610 beds in 2018 (9%) while the 61 day surgery hospitals have no beds.

Using the categories of contractual status with sickness funds, acute hospitals fall into four groups: 1) 35 university hospitals, which account for approximatively 10% of all acute care hospital beds; 2) 1527 hospitals enlisted in state hospital requirement plans (87.7% of acute care hospital beds); 3) 138 acute hospitals additionally contracted by sickness funds according to §109 SGB V (1.7% of acute care beds); and 4) 160 acute hospitals without such contracts (0.5%). In the latter category, hospital services are not covered by SHI and are thus only accessible for privately insured and self-paying patients (the latter may also include patients with SHI).

Preventive and rehabilitative care hospitals

Besides hospitals, an additional 1142 institutions with 164 266 beds (2 beds per 1000 population) were dedicated to preventive and rehabilitative care in 2017. Compared to *hospitals*, the ownership structure differs for *preventive and rehabilitative institutions*, with the vast majority being for-profit: 225 institutions were publicly owned (with a total of 30 700 beds or 19% respectively), 308 institutions were private not-for-profit (25 866 beds or 16%), and 609 were private for-profit institutions in 2017 (107 700 beds or 66%). In total, 92% of preventive and rehabilitative care facilities have been contracted by the sickness funds (and were thus able to provide care to SHI-insured patients). This represents 95% of all beds in preventive and rehabilitative institutions (GBE-Bund, 2020e).

There are no representative studies regarding the condition of facilities beyond the necessary requirements to qualify for listing in state hospital requirement plans (see Section 2.7 Regulation). In a representative study among hospitals in 2017, 57% indicated that they used investment funding primarily for renovation and refurbishment of facilities, 20% for the acquisition of high-cost medical devices and 7% for information technology. Additionally, the hospitals with more than 600 beds indicated the highest

TABLE 4.2 Number of hospital facilities and beds by ownership, function and SHI contract status, 2018

	HOSPITALS (GENERAL AND OTHER)				PREVENTIVE AND REHABILITATIVE INSTITUTIONS[a]			
Ownership	**Publicly owned**	**Private not-for-profit**	**Private for-profit**	**TOTAL**	**Publicly owned**	**Private not-for-profit**	**Private for-profit**	**TOTAL**
Number of institutions	552	650	723	**1 925**	225	308	609	**1 142**
Number of total beds	238 907	164 081	95 204	**498 192**	30 700	25 866	107 700	**164 266**
% of total beds	48	33	19	**100**	19	16	66	**100**
Function	**Acute (general) hospitals**	**Other: Psychiatric hospitals**	**Other: Day or night hospitals**	**Total**	n/a			
Number of institutions	1 585	279	61	1 925				
Number of total beds	451 582	46 610	0	498 192				
% of total beds	91	9	0	100				
SHI-contract status[b]	**University hospitals**	**Hospitals listed in state hospital requirement plans**	**Hospitals additionally contracted by sickness funds**	**Hospitals without contracts**	**With contracts**		**Without contracts**	
Number of institutions	35	1 314	76	160	1 055		87	
Total	1 585							
Number of beds in acute (general) hospitals	45 491	396 129	7 687	2 275	155 812		8 454	
Total	**451 582**							
% of total beds of acute hospitals	10	87.7	1.7	0.5	95		5	
Investment costs	Taxes (University Capital Investment Act)	Taxes (Hospital Financing Act)	Owner	Owner	Owner		Owner	

Sources: GBE-Bund, 2020e; Statistisches Bundesamt, 2018a

Note: [a] refers to 2017; [b] applies to acute (general) hospitals only; n/a: not applicable

need for investments and spend most on renovation and maintenance of facilities (Deutsches Krankenhausinstitut, 2019).

REGULATION OF CAPITAL INVESTMENT

The Hospital Financing Act (*Krankenhausfinanzierungsgesetz*) regulates the "dual financing" system for hospitals: while the states finance capital investments, running costs are funded through the sickness funds, private health insurance companies and self-payers. In order to be eligible for investment costs, individual hospitals are required to be listed in the hospital requirement plans set by the states. As Table 4.2 shows, 88% of beds are in *hospitals* with owners entitled to investment KHG funding from the states due to their enlistment in the hospital requirement plans in 2018. University hospitals, representing a further 10% of bed stock, are also entitled to state capital investment funding under the University Capital Investment Act (*Hochschulbaufördergesetz*) (see Section 3.7.1 Paying for health services).

Enlistment in a state's hospital requirement plan (which details the number of contracted specialties and associated bed capacities) entitles hospitals to state investment funding via two strands:*

1. A flat-rate grant for short-term assets (3–15 years of economic life) and minor construction work; the grant amount is determined by the size of the hospital (e.g. number of beds and cases, level of care delivered) and are adjusted to cost developments. Hospitals are free to spend these grants in the course of a year.
2. Hospitals can apply for additional grants to the responsible state ministries. Possible areas for investment funding are e.g. costs for newly built hospitals and initial procurement or replacement of

* Some states reformed their capital investment regulations: the states of Brandenburg (2013), Berlin (2015) and Hesse (2016) switched to a service-related, flat-rate for investments. The German National Institute for the Reimbursement of Hospitals (*Institut für das Entgeltsystem im Krankenhaus – InEK)* has calculated individual investment ratios based on the DRG- and PEPP-catalogue since 2018 (according to §10 KHG; Institut für das Entgeltsystem im Krankenhaus GmbH (InEK), 2020). Other states like North-Rhine Westphalia (2008), Saarland (2010) and Bremen (2011) adjust the flat-rate grant to cover for long-term investments (*Baupauschale*).

medical equipment, costs for transforming wards within a hospital into long-term care facilities, and funds to facilitate the closure of hospitals (§9 KHG). In contrast to the flat-rate grant, however, financing decisions for individual grants are at the discretion of responsible state ministries and dependent on available budgetary means and political priorities.

State laws regulate further details of individual investment programmes (for a detailed account see Deutsche Krankenhausgesellschaft (2019)). Additional investment financing is available between 2016 and 2024 through the federal Hospital Structure Fund (*Krankenhausstrukturfonds*) with a line of financing in total of up to € 2 billion (co-financed by states) for capital investments. The additional funds which have resulted from the Reform of Hospital Structures Act (*Krankenhausstrukturgesetz*) in 2016 aim specifically at decreasing acute care bed capacities through the concentration of care, transformation into e.g. palliative care wards, or closing hospitals (sites) altogether. In 2018, € 438 million of this additional funding was spent on cutting capacities down by approximately 3000 beds (Bundesamt für Soziale Sicherung, 2019). Since 2019, based on the Nursing Staff Empowerment Act *(Pflegepersonal-Stärkungsgesetz*), funding has also been focused on IT security, hospital networking, hospital centre formation, (integrated) emergency care and training in nursing care.

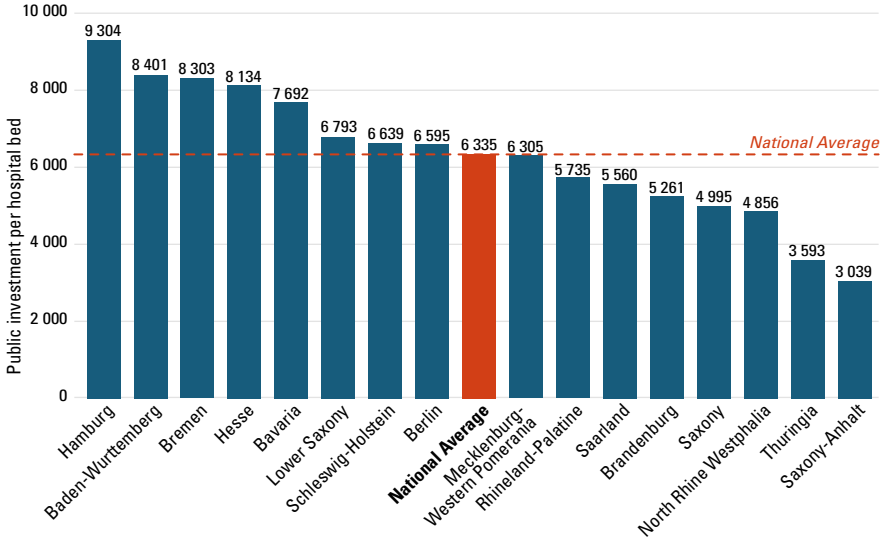
A similar regulation on capital investment is in place for psychiatric hospitals enlisted in state hospital requirement plans, while preventive and rehabilitative institutions are not entitled to state funding for investment costs. Hospitals that are not entitled to the above described investment funding – and partly also hospitals that are underfinanced – must amortize investments from the reimbursements (payments for services) they receive from the sickness funds.

INVESTMENT FUNDING

Funding for investment is financed through general taxation by the states and is separated from reimbursement by sickness funds for running costs. In 2017 a national average of € 6335 per (hospital and psychiatric) bed was spent on investments (or € 142 per case) but there is wide variation

among states, with the highest spending state, Hamburg (€ 9304 per bed), spending three times as much as the lowest, Saxony-Anhalt (€ 3038) (Figure 4.2). Combined, a total of € 3043 million was spent on investments for eligible hospitals in 2018 compared to € 2762 million in 2017. In a variety of states, however, funding of investments has been continuously decreasing over time and stood at 0.09% of German GDP in 2018 (compared to 0.24% in 1991). This decrease is a recurrent concern in public debates, as it has assumingly two consequences: firstly, hospitals seek to amortize investments through reimbursements they receive from the sickness funds by e.g. having high activity levels or reducing (personnel) costs, and secondly, a lack of capital investment is delaying renovations and necessary modernizations of hospitals. In 2018 the actual demand for capital investments in eligible hospitals was estimated to be roughly twice as high as the current level of capital investment by states, but estimations go up to as high as € 11 000 million (Augurzky & Beivers, 2019; Augurzky et al., 2017). Residential and long-term care facilities, preventive and rehabilitative institutions, and those (general and psychiatric) hospitals without SHI contracts are subject to capital investment decisions by their owners.

FIGURE 4.2 Public investment per hospital bed among states, 2017



Source: Deutsche Krankenhausgesellschaft, 2019

4.1.2 *Medical equipment*

In hospitals that are included in the hospital requirement plans, capital investment in high-cost medical equipment is financed by the states (see Section 4.1.1 Infrastructure, capital stock and investments). In 2018, 1095 out of the total of 1925 hospitals were equipped with 12 631 high-cost medical devices. Out of these, 1529 were computed tomography (CT) scanners, 5773 dialysis machines, 1174 angiography units, 478 gamma cameras, 123 positron emission tomography (PET) scanners, and 1007 magnetic resonance imaging (MRI) units (Statistisches Bundesamt, 2020g). For hospitals not eligible for state funding and for the ambulatory care sector, funding of high-cost medical technology must be amortized through reimbursements by the sickness funds or private capital.

Table 4.3 shows the increase in capacities of expensive diagnostic and therapeutic medical technologies in hospitals and in ambulatory care since 2000. As of 2017, the number of MRI units was even higher in the ambulatory sector than in the inpatient sector. In comparison to other EU Member States, Germany has the highest density of MRI units per 100 000 population (3.5) and a high density of CT scanners overall (3.5), with only Switzerland (3.9) and Denmark (4.0) recording higher levels in 2017.

TABLE 4.3 Diagnostic imaging technologies (CT scanners and MRI units) per 100 000 population, 2000–2017

	2000	2005	2010	2015	2016	2017	% CHANGE (2000–2017)
Computed Tomography scanners	**2.46**	**2.95**	**3.26**	**3.51**	**3.52**	**3.51**	**+43%**
In hospitals (or similar)	1.22	1.54	1.79	1.89	1.91	1.92	+57%
In ambulatory care (or similar)	1.25	1.41	1.47	1.62	1.61	1.60	+28%
Magnetic Resonance Imaging units	**1.43**	**2.00**	**2.73**	**3.36**	**3.45**	**3.47**	**+143%**
In hospitals (or similar)	0.49	0.71	1.04	1.18	1.21	1.24	+153%
In ambulatory care (or similar)	0.94	1.28	1.69	2.18	2.24	2.23	+137%

Source: Eurostat, 2020e

4.1.3 *Information technology and eHealth*

Information and communication technologies in the health care sector are gaining in importance for their potential to aid the efficient use of resources (Fischer & Krämer, 2016). The German presidency of the Council of the European Union (in the second half of 2020) has given high priority to the issue of digitalization (see Section 6.2 Future developments).

At the national level, the introduction of the electronic health card (*elektronische Gesundheitskarte – eGK*) is by far the most important project for the standardized exchange of information across health care sectors. Introducing the eGK, as well as securing a safe data exchange, has been entrusted to the corporatist associations and the gematik GmbH since 2005. Since 2015 the use of electronic health cards has been compulsory in order for insurees to be entitled to SHI benefits. By January 2019 all physician, dentist and psychotherapist practices had to be furnished with a reader device and other technical equipment for the eGK (basic roll-out). If individual practices do not connect to the safe data exchange, their overall reimbursement level can be cut by 2.5%. All physician practices without patient contacts (e.g. laboratories), pharmacies and hospitals should also have connected to the safe data exchange network by the end of June 2020 at the latest, while midwives, long-term care institutions and physiotherapists can connect to the network on a voluntary basis.

The eGK contains (by law) administrative data such as name, address, date of birth, insurance number and insurance status and a photograph of the insured (the photograph requirement applies to everyone aged 15 years or older, but not for individuals requiring a high level of help in their daily activities; for all specifications see §291 SGB V). The back of the eGK is actually the European Health Insurance Card which facilitates cross-country provision of care in cases of emergencies when people are abroad. The eGK is designed to allow medical data to be stored in future expansion stages, such as emergency data (e.g. diagnosis, medications, allergies, drug intolerances and contact details of GP or family members), an electronic patient file (*elektronische Patientenakte – ePA*; obligatory from January 2021 onwards), medication plans (a paper form has been standardized since 2016) as well as organ donation declarations, or a patient's 'living will' (advance directives for medical treatment). Except for the mandatory administrative data, patients can voluntarily decide on which

parts of their medical data are accessible to different medical providers via the eGK.

Communication between providers is subject to the same legislation as the eGK (2004, 2015, 2019) and should benefit from the same nationwide secure data exchange system, partly from using a guaranteed electronic signature. In 2017, however, the vast majority of communication between providers was still done via postal letter and fax and only 4% of physicians used the electronic physician report regularly (Ärztezeitung, 2017). Since 2016 physicians have been incentivized through additional reimbursement to use the electronic physicians report (€ 0.55 for each report), share diagnostic material (e.g. CT scans) and offer online consultation hours. Along similar lines, the use of electronic prescriptions and electronic transferrals should be enabled by 2022 (see Section 6.2 Future developments).

The most discussed concern surrounding the eGK is data security and preventing (abusive) access by unauthorized parties to the exchange network and individual records. This is despite the fact that there are several mechanisms in place to secure a high standard of data security, e.g. the card processor saves only administrative data, emergency data and the electronic medication plan, while other sensitive information is stored in several disparate locations. In addition, due to the slow implementation process (originally the eGK should had been implemented by 2006), by 2018 several individual sickness funds had launched electronic patient files (*elektronische Gesundheitsakte – eGA*); but these are based on insurance data alone. From 2022 onwards, members of SHI sickness funds will have rights regarding data transfer from their eGA into the ePA.

There are fluctuations in the use of information technologies in the health care sector among the population according to age and social status. In 2019, 91% of German households had internet access. The availability of internet access correlates with monthly net household income: 80% of households with monthly incomes under € 1500 have internet access, whereas this rises to 99% for households with monthly incomes over € 3600. Additionally, 84% of single-occupancy households have internet access compared to 99% of households with at least one child. The population group aged 16–24 records the highest level of internet access (99%), while the lowest is 70% for those aged over 65 years (see Section 2.8.1 Patient Information) (Statistisches Bundesamt, 2019h).

4.2 Human resources

4.2.1 *Planning and registration of human resources*

Mechanisms for planning human resources hardly exist in Germany and are only available for SHI physicians and psychotherapists in ambulatory care, and for some study programmes. Places for academic training at universities in medicine, pharmacy and dentistry are limited by individual universities. The ratio between the number of applicants and the available places is between 2:1 and 5:1 (see Section 4.2.4 Training of health workers). The number of training schools and the number of training places for allied health professions are not restricted.

Under Germany's federal structure, the states are responsible for regulating and financing education, as well as for registering and supervising health professions. The state ministries of health are responsible for the registration of health care professionals and grant licences to practise (approbation) for physicians, psychotherapists, pharmacists and dentists, and authorize the use of professional titles for the other allied health care professions. In general, the respective chambers of physicians, psychotherapists, dentists, pharmacists and nurses (the latter only available in three states) are responsible for the organization, implementation and supervision of further training activities. Re-accreditation (relicensing) is not required in any of the health professions.

Each physician has to register with the responsible state-level Chambers of Physicians as a prerequisite for a licence. These chambers represent their members' interests in the political sphere, define uniform regulations for medical professional duties through the professional code of conduct, and outline quality assurance protocols. The chambers are coordinated by an umbrella organization, the Federal Chamber of Physicians (see Section 5.3 Primary care). Dentists, pharmacists and psychotherapists are organized similarly. Ambulatory care SHI physicians need to ascertain with their Regional Associations of SHI Physicians that they are undertaking appropriate professional development through further training in order to maintain their accreditation every five years. The EU standards for mutual recognition are applied to physicians, dentists, nurses, midwives and pharmacists.

4.2.2 *Trends in the health workforce*

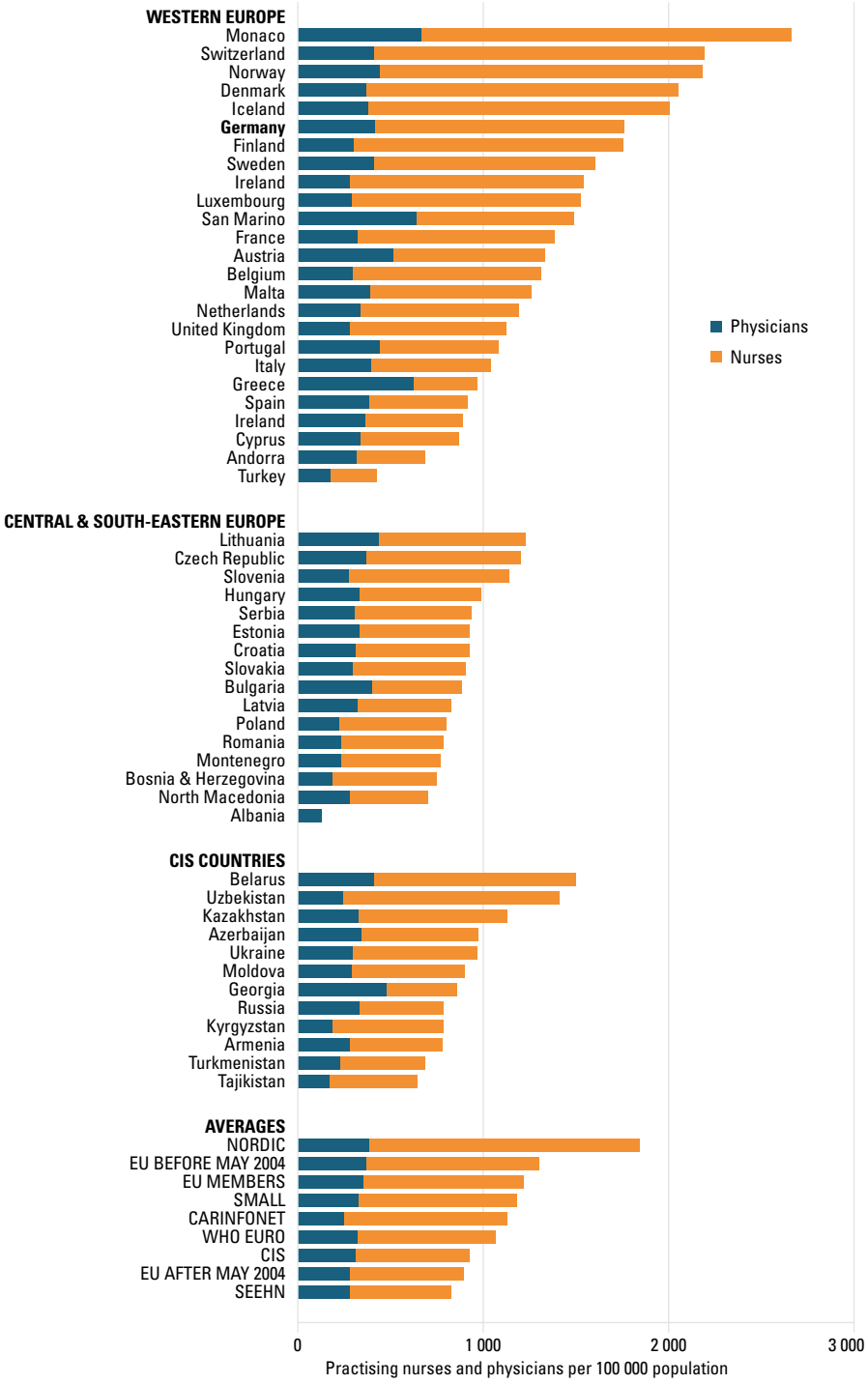
Health care is an important employment sector in Germany, providing jobs for almost 5.7 million people and accounting for 12.3% of total employment at the end of 2018. Between 2000 and 2018 the number of people working in the health sector increased by a total of 1 653 000 or 41.1% (Statistisches Bundesamt, 2020f). Of the 5.7 million people working in health, a total of 2.3 million worked in ambulatory care, 2 million in inpatient care or day surgery and 558 000 worked in health industries. Another 220 000 worked in administration, 71 000 in emergency services, 38 000 in health protection, and 450 000 in other facilities. Three-quarters of all health care professionals were female (75.6%), with the highest proportion of women in ambulatory nursing care (86.7%) and the lowest in emergency care (31.0%) (Statistisches Bundesamt, 2020d). Of the 5.7 million health workers, around 52% worked part-time, which corresponds to an overall workforce of 4.1 million full-time equivalents (Statistisches Bundesamt, 2020c, 2020d). The share of part-time employees was highest in ambulatory care facilities (71.4%), and lowest in the pharmaceutical industry (15.8%) (Statistisches Bundesamt, 2020d).

Between 2000 and 2018 most health institutions experienced strong jobs growth in non-physician medical practices, such as physiotherapy, occupational and speech therapy (+112%), in ambulatory care (+49%), in inpatient and day surgery facilities (+27%), in hospitals (+15%), and in the pharmaceutical industry (+65%) (Statistisches Bundesamt, 2020f). Despite this, the Ministry of Labour reported a critical shortage of health workers in 2017, particularly for physicians, dentists, nurses, emergency care staff and midwives (Bundesministerium für Arbeit und Soziales (BMAS) 2017b). It is predicted that this shortage will increase, mainly due to rising demand for health workers to care for the ageing population and to the retirement of older health workers (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung, 2018).

Figure 4.3 compares the numbers of practising physicians and nurses per 100 000 population in the WHO European Region, using WHO Health for All data. Norway, Switzerland and Iceland have the largest numbers of physicians and nurses per 100 000 population. Germany, with 413 physicians and 1322 nurses per 100 000 population, is ranked sixth in Western Europe.

Table 4.4 outlines trends in human resources and graduates in different professions since 1995.

FIGURE 4.3 Practising nurses and physicians per 100 000 population, 2017 or latest available year



Source: World Health Organization Regional Office for Europe, 2020

TABLE 4.4 Health care workforce (practising) and graduates per 100 000 population, 1995–2018

	1995	2000	2005	2010	2015	2018	CHANGE (%) 1995–2018
Physicians	305	325	340	371	414	431	+41.3
of which GPs	69	72	72	69	70	71	+2.9
Dentists	72	75	77	81	86	86	+19.4
Pharmacists	55	58	58	62	64	66	+20.0
Midwives	n/a	21	23	26	28	29	+38.1
Nurses	n/a	999	1 065	1 152	1 265	1 322	+32.3
Physicians graduated	12.6	11.2	10.8	12.1	11.3	11.5	-8.7
Dentists graduated	2.6	2.3	2.0	2.6	2.8	2.7	+3.8
Pharmacists graduated	2.2	2.4	2.2	2.3	2.5	2.7	+22.7
Midwives graduated	0.74*	0.72	0.75	0.73	0.81	0.76	+2.7
Nurses graduated	41.5*	40.4	44.4	45.1	54.5	52.9	+27.5

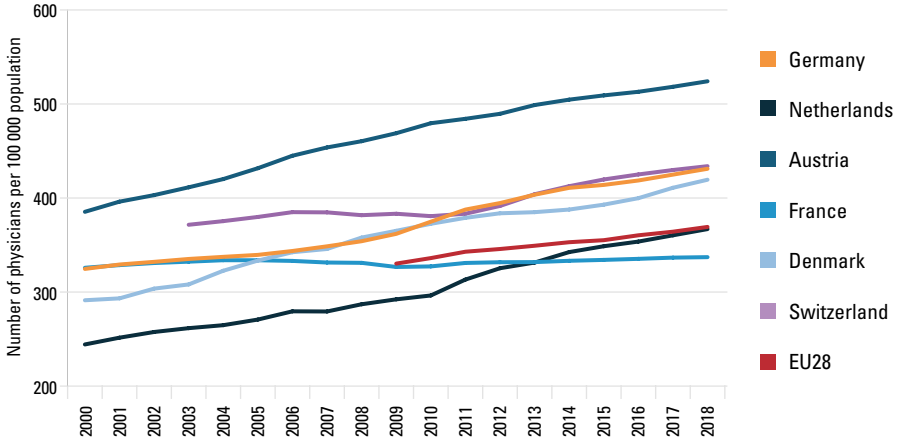
Source: OECD, 2020d

Notes: *Data from 1996; n/a: not available

PHYSICIANS

Based on data for 2018, a total of 515 640 physicians were registered with the Federal Chamber of Physicians. Of these, 392 402 were active and 123 238 retired or not active as physicians. Of all active physicians, 201 811 practised in hospitals (51%) and 157 288 in ambulatory care (40%). Another 33 303 physicians (8%) worked in the public health care sector, administration, government or other sectors (e.g. pharmaceutical industry). In 2018 there were 473 active physicians per 100 000 population, or one active physician per 211 population according to the Federal Chamber of Physicians. The distribution of physicians varies greatly within Germany (see Box 4.2), from 400 practising physicians per 100 000 population in Brandenburg, to 724 practising physicians per 100 000 population in Hamburg (Bundesärztekammer, 2018; GBE-Bund, 2020c).

FIGURE 4.4 Number of physicians per 100 000 population in Germany and selected countries, 2000–2018



Sources: Eurostat, 2020a; World Health Organization Regional Office for Europe, 2020

According to Eurostat data from 2018, the average of 431 practising physicians per 100 000 population in Germany* was above the EU28 (369 per 100 000) average. The density of physicians was below the number of 524 per 100 000 in Austria and 434 per 100 000 in Switzerland but higher than the other comparator countries featured in Figure 4.4 (Eurostat, 2020b). Although the number of physicians in general has increased continuously in recent years, the number of GPs has decreased, both in relation to the population and especially in relation to all physicians, the latter from 27% in 2000 to 23% in 2017 (World Health Organization, 2020a) (see Section 5.3 Primary care). Another trend highlights the growing feminization of the health sector; while in 1991 a third of the medical profession was female, in 2018, 47.2% of all practising physicians were female (Bundesärztekammer, 2018).

NURSES

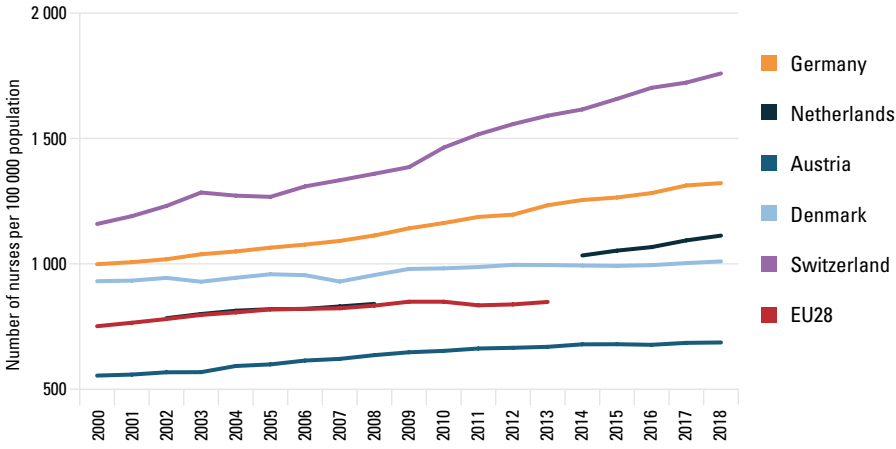
The number of nurses has also increased substantially, although at a slower pace than that of physicians. Between 2000 and 2018 the number of

* The data for practising physicians excludes the 8% of physicians working in e.g. administration and government.

professional nurses and midwives increased by 30.5% from 721 000 to 941 000, and the number of all practising nurses (including associate nurses) and midwives by 33.7% from 838 000 to 1 120 000 (Eurostat, 2020g). Based on data from the Federal Bureau of Statistics (Statistisches Bundesamt, 2020a, 2020c), the number of nurses is significantly lower when taking full-time equivalents (FTE) as 55% of nurses and midwives are working part-time (this represents a total of 746 000 nurses (FTE)). Based on head counts, 84% of all nurses are female. In 2018 most nurses (60%) worked in hospitals and other inpatient facilities, followed by ambulatory care facilities. Some 84 000 nurses were working in nursing specialties (psychiatry, intensive care), of whom 6000 practised paediatric nursing (Statistisches Bundesamt, 2020c, 2020e).

According to Eurostat data, in Germany there were 1322 practising nurses per 100 000 population in 2018, which is above the EU28 average, and the highest among the selected countries, except for Switzerland (1759 per 100 000) (Figure 4.5).

FIGURE 4.5 Number of nurses per 100 000 population in Germany and selected countries, 2000–2018 or latest available year



Sources: Eurostat, 2020a; World Health Organization Regional Office for Europe, 2020

In order to make nursing and long-term care more attractive as an occupational field, the Federal Ministry of Health, in a joint action with the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth and the Federal Ministry of Labour and Social Affairs, initiated the Concerted

Action for the Care Workforce (*Konzertierte Aktion Pflege*) in 2018, bringing together the relevant actors for long-term and hospital care. In 2019 all involved actors agreed on numerous measures to improve working and training conditions in the care sector. Five working groups adopted comprehensive measures covering training, personnel management, occupational health and safety and health promotion, innovative care approaches and digitalization, the recruitment of nursing staff from abroad, and remuneration conditions in the care sector. A first status report on the implementation of these measures was published in 2020 (Bundesministerium für Gesundheit (BMG) et al., 2020). In addition, the Nursing Care Professions Act (*Gesetz zur Reform der Pflegeberufe*), adopted in 2017, aimed at modernizing nursing care training, including training for LTC professionals (see Section 4.2.4 Training of health workers).

MIDWIVES

Around 24 000 midwives were practising in Germany in 2018, of whom 13 000 were in ambulatory care (Statistisches Bundesamt, 2020e). In 2017 a total of 11 233 midwives (48.8% of all practising midwives) were working in hospitals (IGES Institut, 2019). The number of midwives in Germany has continually increased (by 14.3%), from 21 000 in 2012 to 24 000 in 2018 (Statistisches Bundesamt, 2020e).

DENTISTS

Of a total of 97 372 registered dentists, 72 592 were practising in 2018. This number represents 87.4 practising dentists per 100 000 population. The density varies from 70.4 practising dentists per 100 000 population in Saarland to 118.4 per 100 000 population in Berlin. Of the practising dentists, 46% were female and 69% were working in their own practice as self-employed dentists (Bundeszahnärztekammer & Kassenzahnärztliche Bundesvereinigung, 2020; Bundeszahnärztekammer, 2020). A total of 41 097 dentists' practices were reported in 2018. In 2018 a total of 356 000 persons were employed in these dentists' practices for ambulatory dental care, of whom 82.9% (295 000) were female (Statistisches Bundesamt, 2019g).

In the academic year 2018/19, a total of 12 714 persons studied dentistry, of whom 66.3% were female. In 2017, 1762 graduated from their studies (Bundeszahnärztekammer, 2020).

PHARMACISTS

In 2018, 52 048 pharmacists worked in 19 423 community pharmacies while another 2445 pharmacists worked in one of the 375 hospital pharmacies (Bundesvereinigung Deutscher Apothekerverbände e.V., 2019). Between 2000 and 2018 the number of pharmacists in community pharmacies increased by 13% from 46 078 to 52 048, of whom 73.0% were female, and the number of all persons employed in pharmacies increased by 16.6% from 136 470 to 159 141 (GBE-Bund, 2020d).

ALLIED HEALTH PROFESSIONALS

In 2018 there were around 240 000 physiotherapists, 64 000 occupational therapists and 30 000 speech therapists in Germany (Statistisches Bundesamt, 2020e). According to the German Association for Physiotherapy, about half of the physiotherapists (46%) were working full-time. In 2018 around 10% of the practising physiotherapists worked in hospitals and 6% in prevention and rehabilitation facilities (Deutscher Verband für Physiotherapie (ZVK) e.V., 2020). Around 20% of physiotherapists were self-employed in 2018, of whom 39% had no employees (Statistisches Bundesamt, 2019g). In 2018, 14 of the 16 states (except for Bremen and Hamburg) reported a shortage of physiotherapists (Deutscher Verband für Physiotherapie (ZVK) e.V., 2020).

PSYCHOTHERAPISTS

In Germany psychotherapeutic care involves medical psychotherapists (physicians) and psychotherapists (previously named "psychological psychotherapists" or "child and youth psychotherapists" (Bundesgesundheitsministerium, 2019). Psychotropic pharmaceuticals cannot be prescribed by psychotherapists. The number of psychotherapists in ambulatory care has increased in

recent years, with large differences between states. In 2019 the number of medical psychotherapists ranged between 0.3 and 17.4 per 100 000 population, and the number of psychotherapists varied between 17.2 and 68.3 per 100 000 population (Kassenärztliche Bundesvereinigung (KBV), 2019b). In 2018 there were approximately 46 000 psychotherapists (including child and youth psychotherapists), most of them employed in the ambulatory care sector (34 000 or 73.9%) (Statistisches Bundesamt, 2020e).

Using available data for 2018, a total of 15 501 physicians were working in the field of medical psychotherapy, 7388 (47.7%) in ambulatory care and 6906 (44.6%) in inpatient and day care. Of the 2449 medical child and youth psychotherapists, 1202 (49%) worked in ambulatory, and 1108 (45%) in inpatient care (Bundesärztekammer, 2018).

BOX 4.2 Distribution of health workers

Although Germany ranks among the highest in international comparisons for the number of health workers, the distribution of health professionals within the country varies greatly. Differences can be seen between the states in general and between urban and rural areas for physicians, dentists and psychotherapists. The distribution of these health workers in rural areas is below the average, whereas in federal city states, such as Berlin, Hamburg and Bremen, it is above the average. Moreover, the number of physicians in some specialties, such as GPs, is decreasing despite an increasing demand. This imbalance leads to a shortage of health workers and deficits in health care, especially in rural areas. In particular, the weak infrastructure in rural areas reduces their attractiveness for health workers, mainly physicians in ambulatory care, as places to settle and practise (Kassenärztliche Bundesvereinigung (KBV), 2020a). Several political strategies have aimed at improving the number of health workers in rural areas: for example, allowing physicians in rural areas with a shortage to practise beyond the age of 68 and granting medical studies places to students who commit to practise as GPs in rural areas once they have qualified (Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen, 2014a).

4.2.3 *Professional mobility of health workers*

The number of foreign health workers in Germany has been growing constantly since 2000. In 2018 the Federal Chamber of Physicians registered

48 672 foreign physicians practising in Germany, a 7.3% increase over the previous year (and an overall increase of 317% since 2000, when there were 11 651 foreign physicians). Of all practising physicians in 2018, foreign physicians accounted for 12.4%. Of these, 22 577 (46%) came from EU Member States, 11 559 (24%) from Asia, 9220 (19%) from other European countries, 3601 (7%) from Africa, 1240 (3%) from Central and South America, 371 (1%) from North America, and 30 (0.1%) from Australia. Most foreign practising physicians came from Romania (4312), Syria (3907), Greece (2776), Austria (2309), Russia (2180), and Poland (1918) (Bundesärztekammer, 2018). The majority of foreign doctors worked in hospitals (80.1%), and only 12.2% worked in ambulatory care (GBE-Bund, 2020a). The reason for this imbalance is probably due to the higher investment costs for practice-based physicians and the strict legal framework for establishing a practice (Ognyanova & Busse, 2011).

In terms of out-mobility of doctors, 1941 physicians left Germany in 2018, of whom 56.7% were German. Of these physicians 800 (41%) migrated to EU Member States, 643 (33%) to other European countries, 147 (8%) to the Americas, 120 (6%) to Asia, 32 (2%) to Africa and 32 (2%) to Australia. Most physicians went to Switzerland (643), Austria (254), the United States (122) and the UK (59). Most German physicians migrated to the UK and Switzerland (Bundesärztekammer, 2018).

According to Microcensus data, a total of 593 000 foreign non-physician health workers were reported in Germany in 2014, accounting for 15% of all health workers. Of those, 140 000 worked as qualified nurses for the elderly and 127 000 in nursing. The share of foreign health workers among all health workers was highest in carers for the elderly (23%), dental assistants (22%) and nurses (17%). Most foreign non-physician health workers working in Germany were from Poland (100 000), Turkey (62 000), Russia (53 000), Kazakhstan (45 000) and Romania (25 000) (Kraemer, 2016).

EU mobility statistics from 2000 to 2017 show that during this period 10 622 nurses left Germany for other European countries and 3459 nurses came to Germany from European countries (Eurostat, 2020f; Verdi, 2018). The OECD reports a total annual inflow of foreign-trained nurses of 5142 in 2018 (OECD, 2020d). The main reasons for nurses leaving Germany are high workloads, poor working conditions, limited decision-making powers, lack of recognition, low remuneration, lack of collaboration between nurses

and physicians, and poor advanced training opportunities (Ognyanova & Busse, 2011).

Measures in recent years have aimed at recruiting health workers from foreign countries to deal with the shortage in skilled health workers, especially nurses. These strategies have mainly been based on pilot projects, such as the Federal Ministry of Economic Affairs and Energy's initiative to recruit young people from Vietnam to train as nurses in Germany (Bundesministerium für Wirtschaft und Energie, 2020) or the newly founded German Agency for Nursing Professions (*Fachkräfteagentur für Gesundheits- und Pflegeberufe – DeFa*), in cooperation with the German Competence Centre for International Health and Care Professions (*Deutsches Kompetenzzentrum für internationale Fachkräfte der Gesundheits- und Pflegeberufe – DKF*). These agencies have been established by the Federal Ministry of Health and support the quick entry of international nurses into Germany and the recognition of their qualifications (Deutsche Fachkräfteagentur für Gesundheits- und Pflegeberufe (DeFa), 2020; Deutsches Kompetenzzentrum für internationale Fachkräfte in den Gesundheits- und Pflegeberufen (DKF) unter Trägerschaft des Kuratorium Deutsche Altershilfe (KDA), 2020).

4.2.4 *Training of health workers*

The training of health workers is a shared responsibility between the federal government, state governments and professional associations. The states are generally responsible for regulating and financing education, as well as for registering and supervising professions, including health professions. However, health professions differ from other professions because of the national regulations for their primary education and the virtual autonomy of the bodies regulating their specializations (secondary professional education) and continuing education.

National standards for curricula and examinations exist for medical studies, dentistry, pharmacy and for most allied health care professions, such as nursing, paediatric nursing, geriatric nursing, assistant nursing, midwifery, physiotherapy, occupational therapy, speech therapy, dietitian, podology, technical assistance or emergency and rescue care.

Other health care professions are either subject to the Vocational Training Act (*Berufsbildungsgesetz*) (e.g. medical and dental assistants,

pharmaceutical commercial employees) or regulated by the Trade and Crafts Code (*Handwerksordnung*) (e.g. opticians, hearing aid acousticians, orthopedic shoe technicians, dental technicians) (Bundesministerium für Gesundheit (BMG), 2020a). In addition, a large number of health care professions are regulated by state law (e.g. nurse assistant, village helper, social assistant) (Robert Bosch Stiftung GmbH, 2013).

PRIMARY PROFESSIONAL EDUCATION AND REGISTRATION

Medicine, dentistry and pharmacy

Many German universities offer degrees in medicine (38 state universities and 3 private universities in April 2020), dentistry (29 state, 1 private) and/or pharmacy (22 state) (Stiftung zur Förderung der Hochschulrektorenkonferenz, 2020). Candidates require a higher education entrance qualification (*Allgemeine Hochschulreife*) after 12 or 13 years of school. The limited study places for these three degrees are allocated as follows for the state universities: 30% of the places are allocated according to the higher education entrance qualification grade, 10% of the places according to aptitude (defined by each university, e.g. vocational training in a health profession, success in competitions) and 60% of the places are allocated through a selection procedure conducted by the universities (*Auswahlverfahren der Hochschulen – AdH)* (Stiftung der Hochschulzulassung, 2020). The "Master Plan for Medical Studies 2020" has initiated changes to the structure and content of the curricula, focusing, for example, on the physician-patient relationship, ambulatory care and general medicine.

In the winter term of 2018/2019, 43 631 people applied for the 9232 places in medicine, 6190 applied for the 1518 places in dentistry, and 3980 for 1841 places in pharmacy (Stiftung für Hochschulzulassung, 2018). The duration of studies is four years for pharmacy, five years for dentistry and six years for medicine. The curricula are highly standardized by federal law and organized around three state examinations. After graduation, physicians, dentists and pharmacists receive their licence to practise (*Approbation*) from the state ministries responsible for health. The number of students and graduates has increased continuously since 2005 (Table 4.5).

TABLE 4.5 Number of students and graduates in health care professions at German universities

STUDENTS	2000/01	2005/06	2010/11	2015/16	2017/18	2018/19
Medicine	80 200	79 847	80 574	89 998	93 946	96 115
Dentistry	13 218	13 335	14 446	15 085	15 151	15 251
Pharmacy	13 201	12 069	12 719	15 548	15 894	15 986
Health sciences/ health management	-	8 876	17 188	35 919	40 409	42 100
Nursing science/ management	-	2 612	3709	11 805	12 311	11 743
Non-physician health professions/therapies	-	3 022	4 360	10 561	11 164	11 374
GRADUATES	**2000**	**2005**	**2010**	**2015**	**2017**	**2018**
Medicine[a]	9 165	8 870	9 894	9 215	9 928	9 563
Dentistry[a]	1 533	1 504	1 721	1 875	1 762	1 759
Pharmacy[a]	1 842	1 847	1 891	1 817	1 806	1 811
Health sciences/ health management[b]	-	850	2 478	5 287	6 590	6 817
Nursing science/ management[b]	-	346	628	1 461	1 809	1 939
Non-physician health professions/therapies[b]	-	154	781	1 482	1 816	2 137

Source: GBE-Bund, 2020h

Notes: [a] Graduates from universities [b] Graduates from universities of applied sciences, with bachelor or master's degrees

Nursing, therapeutic and other health care professions

Primary training of most other health professionals requires vocational technical training after secondary school, leading to qualifications/diplomas, and increasingly university degrees (see below), and usually takes three years. After graduation, health care professionals are eligible for authorization by the state authorities responsible for health to use the professional title.

The primary training of nurses currently takes place in publicly financed facilities, mostly affiliated to hospitals. Their practice-based training in inpatient facilities is combined with course-based instruction at the training

facility (some days per week or in blocks throughout the week), and they receive a vocational training salary. Starting from 2020, according to the 2017 Nursing Care Professions Act (*Gesetz zur Reform der Pflegeberufe*), all nurses will receive joint, generalist training for two years. In their third year they can choose to specialize in the care of children ("paediatric nurse") or the elderly ("geriatric nurse") or to follow generalist training and acquire the qualification of professional nurse (*Pflegefachfrau, Pflegefachmann*). Fees for nursing training were abolished in 2020 (Deutscher Bundestag, 2018a).

Medical assistants and dental assistants are trained separately in a three-year vocational training based at training facilities and physicians' practices, including obligatory rotation, and they receive a basic income. In contrast, schools for other health professions, such as physiotherapists, occupational therapists, dieticians and speech therapists, are often privately funded and charge fees (from about € 150 to € 700 per month). Some states have already abolished these fees, but the nationwide regulation to abolish all fees for health professionals' training and to introduce a vocational training salary is still in progress (Bundesministerium für Gesundheit (BMG), 2020c, 2020o).

According to EU directive 2013/55/EU, the training of midwives at universities is required for all Member States. The Midwifery Reform Act (*Hebammenreformgesetz*) entered into force in January 2020. Training takes place at universities, ending with a bachelor's degree in midwifery. During a transitional period until 2022, midwifery vocational schools are still allowed to offer courses, which have to be completed by 2027 (Bundesministerium für Gesundheit (BMG), 2019f; Deutscher HebammenVerband e.V.).

The Psychotherapists Training Education Act regulates the training of psychotherapists from 2020 onwards and aims to improve psychotherapeutic care. Psychotherapists' training will take place in universities (Bachelor and Master's programmes) and will end with a licence to practise psychotherapy. Further (paid) training in inpatient and ambulatory facilities is organized according to state law which entitles psychotherapists to SHI accreditation (Bundesgesundheitsministerium, 2019).

In recent years an increasing number of undergraduate degrees have been created on the basis of a pilot from 2009 (Bundesgesetzblatt, 02.10.2009). These courses are mostly for nursing, therapeutic-rehabilitative professions, midwives and for diagnostic-technical assistant professions (Robert Bosch Stiftung GmbH, 2013). The vocational training is either fully integrated into a bachelor's programme or interlinked and parallel, where studies continue

after completion of the vocational training until the bachelor's degree is reached. Both paths lead to a Bachelor of Science or Bachelor of Arts degree and a vocational qualification (Stöcker & Reinhart, 2012). The scheduled end of this model phase in 2017 was extended by 10 years in order to better adapt the training to university conditions and to scientifically evaluate the long-term and also financial effects of academic training (Bundesministerium für Gesundheit (BMG), 2016). In line with the Nursing Care Professions Act (2017) (*Gesetz zur Reform der Pflegeberufe*) undergraduate studies in nursing are no longer in the pilot phase: from 2020 onwards they constitute a three-year degree.

SECONDARY PROFESSIONAL TRAINING (SPECIALIZATION) AND CONTINUED EDUCATION

Specialization usually takes two or three years for vocational health care professions and three to six years in academic professions, and another two years for a sub-specialization. Medical graduates are required to specialize if they want to work as SHI-accredited physicians in private practice, while specialization is optional for the other health care professions. German states recognize a maximum of 4 specialties in dentistry, 9 in pharmacy, 13 in nursing and 36 in medicine, with another 79 subspecialties or additional qualifications. Based on decisions by an assembly of physician representatives from the assemblies of the state-level chambers of physicians, the Federal Chamber of Physicians issues a model advanced training regime that is further detailed by the state-level chambers of physicians. For each of these qualifications, a minimum length of training, as well as a catalogue of procedures and skills, is detailed in the training regime. Subsequent to the advanced training period, physicians must pass an examination approved by specialists in the target qualification.

The duration of specialization in general medicine takes five years. The low number of generalists (GPs) has been interpreted as reflecting lower income prospects, a lack of training facilities in ambulatory care and lower (social) prestige attached to this specialization compared to medical doctors in secondary and tertiary hospital care. To redress this, since 2015 the Healthcare Strengthening Act (*Gesetz zur Stärkung der Versorgung in der GKV*) has promoted at least 7500 further training places for GPs and their

salary is adjusted to that of physicians in further training in hospitals (§75a SGB V) (Kassenärztliche Bundesvereinigung (KBV), 2019c).

In 2018, of the 13 336 physicians obtaining a specialist degree, 15.4% were internists, 11.7% GPs, 9.5% anaesthesiologists, 6.6% orthopaedics, 5.1% gynaecologists and 4.8% paediatricians (Bundesärztekammer, 2018). In addition to the general "academization" of nursing that has led to the start of degree qualifications, a large number of full-time or part-time postgraduate and continuing education courses at bachelor and master level are offered in the fields of nurse education, (quality) management, nursing sciences, public health, health or therapy sciences. These are aimed at people with professional training in a health profession as well as graduates of undergraduate courses of study.

Public Health is also available in postgraduate courses of study at universities, mostly in medical faculties. Partly free of charge, partly subject to tuition fees, they are aimed at students with university degrees in both medical and non-medical fields. The health trade professions can proceed with further training for master craftsmen (e.g. master optician). Medical and dental assistants, as well as commercial health professions, can obtain a degree as a specialist in health and social services. Medical assistants have access to 15 different specialization qualifications, including practice or care assistant (e.g. AGnES, EVA, NäPA, VERAH®), which enables them to undertake home visits, wound care, blood sugar and blood pressure monitoring, thus relieving the burden on GPs, particularly in rural areas.

Continuing education is obligatory for all health care professionals who are active in ambulatory care provided under SHI. Evidence of appropriate professional development has to be presented to the Regional Associations of SHI Physicians every five years. In the case of SHI-affiliated physicians, lack of adequate evidence may lead to a reduction of reimbursement (and even a withdrawal of the SHI-accreditation). In general, the respective chambers of physicians, psychotherapists, dentists and pharmacists are responsible for the organization, implementation and supervision of further training activities.

4.2.5 *Physicians' career paths*

After graduation and obtaining the medical licence (*Approbation*), physicians can choose their career paths, either in hospitals or in ambulatory practice.

In hospitals physicians start as assistant physicians (*Assistenzarzt*) during their "residency" (*Facharztausbildung*). This training to become a medical specialist continues for about five to six years and includes working in different specialties or units, according to the intended medical specialty. Senior physicians (*Oberarzt*) lead this training and have responsibility over all the assistant physicians in their wards. The chief physician (*Chefarzt*) is the head of the overall specialty and provides leadership, including management tasks. These designations are not legally defined, however, and therefore hospitals can determine and adjust the designations and also define prerequisites for the promotion of physicians. These decisions are made locally, mostly under the influence of the leading physicians of the clinic or department, and individually for each hospital.

In ambulatory care, directly after graduation physicians can only treat privately insured patients in their own practice. To open a practice that treats SHI-insured patients, a completed residency is mandatory. During their residency physicians are allowed to work in ambulatory care practices of SHI physicians which have been authorized as a "medical education institution".

Physicians can already start their Medical PhD (*Dr. med.*) while still studying. The Doctoral Regulation (*Promotionsordnung*) of each university specifies the requirements regarding form, scope, submission deadlines and admission regulations for doctoral theses. In general, a doctoral degree or habilitation is not required to work as a physician. Since some hospitals (e.g. university hospitals) have internal regulations, a medical PhD can be mandatory for some senior physician positions and a habilitation for a chief physician position.

4.2.6 *Other health workers' career paths*

The career paths of other health workers in Germany are less predetermined than for physicians and depend mostly on individual initiatives and are on a voluntary basis. For example, nurses can apply for a position as a senior nurse, including management tasks, or they can attend further education courses to become a specialized nurse. Another option for further training is academic studies, such as nursing management or nursing science. Dentists and pharmacists can also attend further education courses for a specialty, to become a specialist dentist (*Fachzahnarzt*) or expert pharmacist (*Fachapotheker*).

5

Provision of services

- Health care in Germany is strongly separated by sector (e.g. public health, ambulatory primary and specialized care, and inpatient care). Sectors of care are organized differently along the lines of planning, financing, organization and governance. This fragmentation affects health care in terms of coordination, quality and efficiency.
- In general, there is good availability of providers, but several regions report an undersupply of several types of providers; rural areas are particularly affected. Patients can freely choose their physicians, GPs and specialists alike. Although GPs are usually the first point of contact with the health system – and GP competences to coordinate patients have been strengthened through, for example, GP-centred models of care – they are not official gatekeepers.
- Prescription pharmaceuticals are covered by SHI, while OTC drugs are generally excluded from the benefits basket. Several reform initiatives have targeted effectiveness and efficiency in pharmaceutical care, e.g. early benefit assessment for new pharmaceuticals, prescribing generics, spending caps and negotiating prices with manufacturers. Furthermore, pharmaceutical consumption is on the rise in Germany.
- Long-term care is covered by long-term care insurance. Entitlement is only available upon application and is subject to evaluation, using several care grades. Recipients of home care can choose between benefits-in-kind and cash benefits. For these 3.1 million recipients, informal care, mostly provided by relatives, also plays an important role. Another 0.83 million recipients are living in nursing homes

for long-term care. Reform initiatives between 2015 and 2017 aimed at achieving higher flexibility to combine the two strands of benefits (cash benefits and in-kind services) and also broadened eligibility and benefits.

- The focus on mental health care is growing and currently it has the third highest spending by disease category. The provision of services remains fragmented along the lines of ambulatory, inpatient and rehabilitative care. Ambulatory care for mentally ill adults and children is supported by an increasing number of office-based psychiatrists, neurologists and psychotherapists. The last 20 years has also seen an increase in capacity through specialized hospitals and specialized mental health wards housed within general hospitals, as well as community-based institutions, especially supervised residential arrangements, ambulatory crisis intervention centres, and centres for psychosocial counselling and social support.

5.1 Public health

At the national level there are several institutions undertaking public health functions. For instance, the Robert Koch-Institute advises authorities (at state, federal and international level) on measures for the prevention and detection of communicable diseases and the prevention of their spread and advises the supreme health authorities on measures involving more than one state (pursuant to the Infection Protection Act of 2000, amended in 2020). The Federal Centre for Health Education (*Bundeszentrale für gesundheitliche Aufklärung – BZgA*) is the key authority for disease prevention and health promotion via the means of mass-media campaigns and projects on health-related behaviour (see Section 2.8.1 Patient information). Moreover, the BZgA is commissioned by the Federal Association of Sickness Funds to develop, implement and scientifically evaluate prevention and health promotion programmes.

However, provision of public health is primarily a responsibility of the states; the specific tasks of the public health services and the level at which they are carried out differ from state to state (although a majority is delegated to municipalities). The broad public health responsibilities include activities

linked to the states' sovereign rights as well as the care provided for selected groups, such as:

- prevention, surveillance and containment of communicable diseases;
- health reporting;
- hygiene supervision in hospitals and among hospital staff, office-based physicians, dentists, allied health professionals and long-term care facilities;
- supervision of commercial activities involving food, pharmaceuticals and drugs;
- overseeing certain areas of environmental hygiene;
- physical examinations of schoolchildren and certain other groups;
- diagnostic and – in exceptional circumstances – therapeutic services for people with specific communicable diseases, including sexually transmittable diseases and tuberculosis;
- diagnostic and predefined therapeutic services (e.g. vaccinations, diagnostic services) for refugees and asylum seekers, as well as hygiene surveillance of their accommodation;
- provision of community-oriented psychiatric services;
- health education and promotion; and
- cooperation and advice to other public agencies.

These services are provided by 375 public health offices across Germany, which vary widely in size, structure and tasks. In 2019 the total workforce was estimated to be around 17 000 people, including a total of 2561 physicians working in public health offices (Bundesärztekammer, 2019; GBE-Bund, 2020f). In addition, public health services in Germany are carried out by a multitude of actors operating at municipal, state and federal level (and by private, public and corporatist bodies of the SHI), and often these services are only one out of their many tasks (Robert Koch-Institut (RKI), 2015c).

The Act to Strengthen Health Promotion and Disease Prevention (2015) (*Gesetz zur Stärkung der Gesundheitsförderung und der Prävention*) mainly aimed at a better coordination of actors and formulating an overarching national prevention strategy (§20d SGB V). To this end, the National Conference on Prevention (*Nationale Präventionskonferenz – NPK*) was established and a summarizing report on actors, activities and spending was first published in 2019. According to this report, sickness funds spent a total

of € 519 million (€ 7.17 per insured) on public health-related services and private insurers € 20.5 million in 2017 (up from € 238 million in SHI and € 13.5 million in PHI in 2012) (Nationale Präventionskonferenz, 2019). In 2018 the SHI spent € 158 million (€ 2.18 per insured) on primary prevention in e.g. kindergartens and schools; € 172 million (€ 2.37 per insured) for occupational health services; and € 214 million for behavioural-related prevention, mostly sport courses or stress management (Bauer et al., 2019).

5.1.1 *Primary prevention programmes – screening and early detection services*

Gradually, after the Second World War, many preventive services, immunizations, mass screening for tuberculosis and other communicable diseases, as well as health education and counselling, were transferred from public health services to SHI physicians. In 2019 the vast majority of immunizations were carried out by SHI physicians. In addition, the following primary prevention measures are under the sole responsibility of SHI:

- Cancer screening is organized according to gender and age groups. Women over 20 are entitled to an annual cervical screening, breast cancer screening (over 30 years of age), and a systematic mammography every two years (aged 50–69 years). Men are entitled to prostate cancer screening after they reach 45. Both genders are entitled to skin cancer screening at the age of 35 (every two years) and to two screenings, at least 10 years apart, for colon/rectal cancer (for men aged 50; women aged 55; including colonoscopy) (Gemeinsamer Bundesausschuss, 2020f). From 2020 the colon and cervical cancer screening programmes are organized screenings with sickness funds sending out invitations to participants every five years; they also provide additional information and programme evaluation. Women aged 20–34 are also entitled to an annual cytological diagnostic and an HPV-test after the age of 35, every three years (Gemeinsamer Bundesausschuss, 2020d).
- Regular check-ups, such as screening for cardiovascular and renal disease and diabetes, for adults are covered once for people in the 18–35 age group, and then every three years for those over 35

(including diagnostics such as urine tests). Women over 25 can have a *chlamydia trachomatis* screening every year. In addition, since 2017 men over 65 have been entitled to screening for abdominal aortic aneurysms (Gemeinsamer Bundesausschuss, 2020g).

- Antenatal care, including up to 14 antenatal appointments and three ultrasound screenings, are provided by a gynaecologist or other SHI-affiliated physician. In addition, further diagnostic tests are covered if deemed necessary, for instance an HIV-test (Gemeinsamer Bundesausschuss, 2020h).
- Regular check-ups for children up to the age of 6 and for adolescents (a) between the ages of 12 and 14 and (b) between 16 and 17 years are also available (Gemeinsamer Bundesausschuss, 2017, 2020e). In addition to a general examination and subsequent counselling if necessary (also with regard to the child's social environment), there are screenings for specific diseases (e.g. pulse oximetry screening, cystic fibrosis) covered by SHI. Immunization status is monitored during the course of health check-ups for children and adults alike.
- Occupational health promotion is also covered by SHI. Since 2019 the sickness funds have been given a benchmark of € 3.15 per insured for occupational health promotion measures.

A total of € 7.52 is set as a benchmark for all primary prevention measures following an individual setting approach (§20 SGB V). With the SHI Guideline for Prevention, the Federal Association of Sickness Funds, in cooperation with the associations of health insurers at the federal level, defines the content-related fields of action and qualitative criteria for the services provided by the health insurers in primary prevention and workplace health promotion, which are binding for the provision of services on site. Regarding secondary prevention, entitlements to medical and dental early detection examinations are subject to negotiations in the Federal Joint Committee.

5.1.2 *Communicable diseases – surveillance, monitoring, immunization*

The Infection Protection Act (2000) regulates the surveillance procedures of around 50 communicable diseases (including food poisoning) and essentially centralizes them at the Robert Koch-Institute to better evaluate and inform the

public about infectious diseases and to cooperate with international agencies. The Robert Koch-Institute is tasked with compiling disease-specific notifications by public health offices and is the key authority for the surveillance and containment of outbreaks of communicable diseases as well as for informing the public (see also Box 5.1). It is supported by 20 national reference centres and 37 consulting laboratories as well as other specialized laboratories for specific agents and diagnostic methods. Since the introduction of the Infection

BOX 5.1 Assessing the effectiveness of public health interventions in Germany

Traditionally, public health services have been characterized as the "third pillar" of health service provision next to ambulatory and inpatient care. However, the importance of public health is only partly reflected by its institutions and institutional arrangements, i.e. in research, coordination and staffing of public health services (Dragano et al., 2016). In particular, there is a shortage of public health personnel. Moreover, public health offices frequently report in surveys that vacant positions remain unfilled for longer than six months (statistics on public health service personnel are not collected). On the other hand, the skill set for health professionals working in public health offices has changed; e.g. there has been a continuous broadening of tasks over the last few years (Gesundheitsministerkonferenz, 2016, 2018b).

In terms of outcomes of public health services, immunization coverage rates, for instance against measles, have been stable since 2007. In 2018 the measles immunization coverage rates stood at 97% of 2-year-olds receiving a first dose and 93% a second dose of the vaccination, both of which are above the corresponding EU averages but below the WHO target rate of 95%.

The Act to Strengthen Health Promotion and Disease Prevention (2015) aimed to improve prevention by also regulating vaccination policy. Some of the measures included: allowing company physicians (in workplaces) to administer general vaccinations and only accepting children in day-care facilities after their parents have been counselled by a physician about vaccination. In the case of a measles outbreak in a day-care facility or school, the institution is allowed to exclude unvaccinated children from attendance. In addition, the recruitment of employees in medical facilities can be made dependent on their immunization status. The recent Measles Protection Act (2020) ruled on the obligatory vaccination against measles for people born after 1970 in certain establishments – a legal mandate that is new to Germany. Since March 2020 vaccination against measles has been mandatory for medical staff as well as children, adolescents and staff in community facilities (e.g. childcare, schools, asylum seekers' homes). The law stipulates that non-vaccinated children can be excluded from visiting childcare facilities, but not from school (except, as mentioned above, in the case of an outbreak of measles according to §28 Infection Protection Act). Non-vaccinated personnel may not take up any activity in community or health facilities. In addition, states can impose penalties for non-compliance.

Protection Act in 2000, standards for HIV have been applied to all sexually transmittable diseases. Public health offices have been required to strengthen their counselling services and to provide diagnostic services and treatment in certain cases, including, for example, for non-compliant tuberculosis patients. The Robert Koch-Institute is also responsible for immunization recommendations that are organized according to vaccine-preventable diseases and age (via its Standing Vaccination Commission (*Ständige Impfkomission – STIKO*)). Currently, vaccination against 15 diseases is recommended (for details see Robert Koch-Institut (RKI) (2019b)). Since early 2020 the Institute has played a key role in Germany's response to the COVID-19 pandemic (Box 5.2).

BOX 5.2 Germany's response to the COVID-19 pandemic

The COVID-19 pandemic in 2020 has highlighted the strengths of Germany's public health system. Here we present a short snapshot of the public health measures taken in response to the outbreak as at August 2020, with the proviso that this is an ongoing national crisis with social, economic and political consequences that are yet to be evaluated.

In terms of governance, Germany's public health offices have had a central role in containing and monitoring the spread of COVID-19. At the same time, the core competencies of federal institutions were strengthened. In particular, the Protecting the Public in an Epidemic Situation of National Importance Act, passed on 28 March 2020, granted the Ministry of Health expanded but time-limited power to support the states in implementing protective measures. The federal parliament can determine whether there is an epidemic situation of national importance and then implement measures regarding the provision of pharmaceuticals and medical devices, including medicines, laboratory diagnostics, and items of personal protective equipment, and strengthen health workforce resources in the health care system. As the federal institution responsible for disease control and prevention, the Robert Koch-Institute has been continuously monitoring the situation, evaluating available information, estimating the risk for the population and providing health professionals and the general public with information and recommendations on COVID-19.

During the first wave of the pandemic, up to the early summer of 2020, infection and mortality rates in Germany were less severe than in other European countries. Overall, during this period 16% of all cases needed hospitalization (Robert Koch-Institut (RKI), 2020b) and only a small proportion of those needed ventilation (Karagiannidis et al., 2020).

By international comparison, Germany was able to benefit from broad testing capacities that were in place prior to the outbreak of the pandemic. Between 16 and 20 March 2020, 174 laboratories participating in a survey by the Robert Koch-Institute

reported on at least 348 619 samples they had processed. By 21 April just under 2.1 million tests had been performed, growing to a total of 5.9 million laboratory tests by the end of June. On 9 June a new regulation extended the testing strategy to a number of new groups, including: people showing no symptoms (asymptomatic cases) who had contact with a sick person for at least 15 minutes or who live in the same household; health professionals; the staff of schools, day care centres and other public facilities; and newly admitted hospital patients with non-COVID-related conditions.

In addition to a robust testing policy, Germany implemented a number of public health measures to mitigate transmission of the virus. In Germany the states are responsible for carrying out infection prevention and control measures. However, in the first week of the pandemic the heads of the states and the federal Chancellor agreed to the joint implementation of measures such as closures of schools, nurseries, universities and cultural institutions from 16 March 2020 onwards, as well as shutting down most leisure activities (e.g. bars, clubs, theatres, sport facilities) and non-essential shopping. On 17 March the government released more extensive physical distancing recommendations: people were advised to stay at home; practise social distancing; avoid the use of public transport, public gatherings and shopping during peak hours; to work from home if possible; and to avoid travelling within the country. The public was also advised to avoid close contact with individuals considered to be vulnerable (elderly people and those with chronic conditions) to minimize possible infection.

On 20 April, as part of a relaxation of measures and reopening strategy, smaller shops were allowed to open subject to social distancing requirements. Children in selected grades gradually returned to schools from 4 May and some cultural and leisure venues also reopened from this date. On 6 May, the government announced further easing of containment measures, extending to all shops, restaurants and sports facilities, with the exact timeline determined at state level.

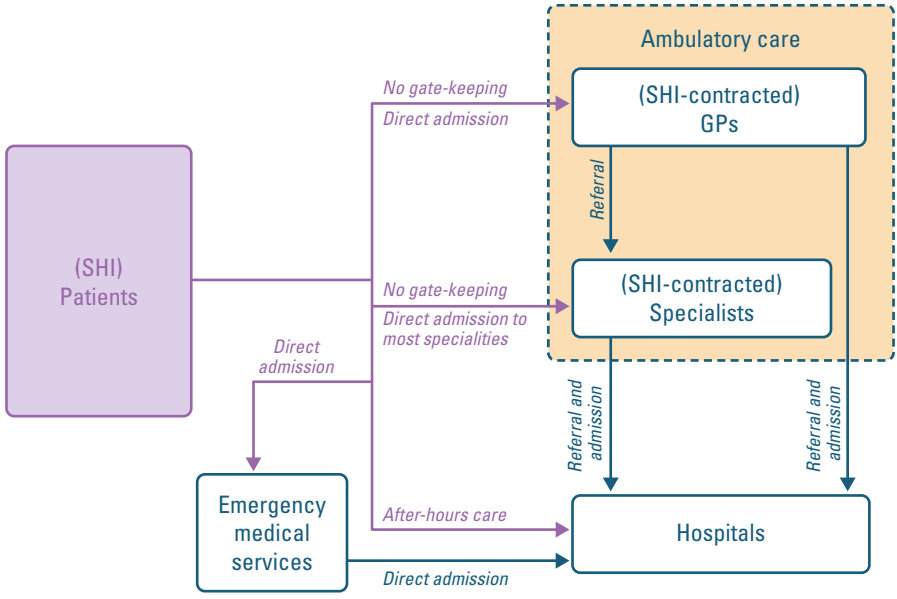
Border controls with neighbouring countries and restrictive cross-border travel rules, which had been in place since 16 March, were also gradually lifted, starting 16 May. Internal EU borders were reopened for the summer season on 30 June but due to a hike in numbers from late July onwards, Germany introduced new measures, such as mandatory testing and quarantine for people (re)entering the country from a number of designated "red zones" within the EU (i.e. countries with significantly increasing infection rates).

An in-depth description of the measures taken in Germany is available from the COVID-19 Health Systems Response Monitor (https://www.covid19healthsystem.org/countries/germany/countrypage.aspx), as well as from the websites of the ECDC (https://www.ecdc.europa.eu/en/coronavirus), WHO (https://www.who.int/health-topics/coronavirus) and other international bodies. Readers can also access an informative podcast on Germany's response to the COVID-19 pandemic at: https://www.commonwealthfund.org/publications/podcast/2020/may/how-germanys-approach-covid-19-sets-country-apart.

5.2 Patient pathways

The German health care system does not have a compulsory gatekeeping system; instead SHI-insured patients can freely choose an SHI-accredited physician whenever they seek treatment. According to §76 SGB V, SHI patients select a GP who should not be changed during the quarter, but in fact there is no control mechanism. Patients can also choose office-based SHI-accredited specialists directly (except for some specialties, e.g. radiologists), but GPs or specialists also refer the patient to other physicians, as necessary. SHI patients who are voluntarily enrolled in a "GP-centred model of care" (*Hausarztzentrierte Versorgung – HZV)* are required to consult their GP first and have a referral for specialist care (see Section 5.3 Primary care). Patients with substitutive PHI coverage also have free choice of physicians and are not restricted to SHI-accredited physicians. Furthermore, patients can directly access and choose hospitals, either with a referral from a GP or specialist, or without a referral via after-hours and emergency care (see Figure 5.1).

FIGURE 5.1 Patient pathway



Source: Authors' own compilation

Note: This pathway reflects a general patient pathway, not a specific DMP-enrolled pathway.

A typical clinical pathway within the German health care system for a patient with chronic diseases is described in the following example. A patient, 54 years of age, suffers from type II diabetes and chronic obstructive pulmonary disease (COPD). She also has a leg ulcer, moderate retinopathy and is slightly overweight (body mass index of 27). The patient was employed as a cashier in a supermarket in the past, but has been unemployed for three years now, receives social assistance benefits and lives on her own.

In Germany the patient would almost always be insured under the SHI scheme and can therefore select any GP, who should offer participation in the Disease Management Programmes (DMP) for type II diabetes and COPD. DMPs aim to deliver coordinated treatment of chronically ill patients according to best available evidence (see Section 5.3 Primary care). The patient will receive two information brochures after initial registration on the DMPs: one for the DMP Diabetes and one for the DMP COPD. The sickness fund can additionally grant special benefits to a patient for participation in DMPs, such as cash or in-kind benefits, but participation is voluntary for patients and physicians. Treatment in the DMP starts with the patient being given a thorough explanation of the programme. On the basis of an assessment of the patient's individual risk, the physician and the patient jointly draw up therapy goals – for glycated haemoglobin (HbA1c) and blood pressure, for example. An individual therapy plan is thus drawn up for diabetes and COPD. In addition, the GP should offer the patient the opportunity to take part in patient education courses.

Physicians who take part in the DMPs undertake to treat their patients according to their contract with the respective sickness fund. This is of particular relevance to the drugs prescribed for the patient, because the guidelines stipulate active substances or groups of active substances that should be given priority in the treatment of the specific condition. The coordination of care is carried out by the patient's GP. Because of the patient's retinopathy, the GP refers her to an eye specialist (office-based, contracted by the sickness funds) for an examination. An annual ophthalmological examination in order to exclude eye complications is also a fixed part of the DMP Diabetes. Because of the leg ulcer, the patient is also referred to a "foot clinic" (which can be an office-based medical treatment centre or in a hospital) to investigate possible consequential damage to the legs and feet. A referral to a qualified diabetes specialist can take place when, for example, a target blood pressure value of below 140/90 mm Hg or an individually agreed HbA1c value is

not achieved, or when a change of treatment from oral antidiabetic drugs to insulin becomes necessary. The DMP COPD stipulates a referral to a qualified specialist when the results of treatment are unsatisfactory in spite of intensified therapy, when long-term treatment with oral steroids is required or when there are secondary disorders. After treatment by the specialist, the patient returns to the care of the GP.

A referral to a hospital, which should also be a part of the DMPs (but does not necessarily have to be), should be considered in a number of situations, including:

- when a dangerous metabolic disorder, severe metabolic crisis or an infected diabetic foot is suspected (DMP Diabetes);
- if a life-threatening exacerbation is suspected or if there is a significant persisting or progressive deterioration of the COPD in spite of initial treatment (DMP COPD).

The actual referral note can be issued by either the GP or a specialist (involved or not involved in the DMP).

The physician arranges regular appointments for examinations with the patient. On a quarterly or half-yearly basis, at registration and at the appointments for examination, one document is drawn up for each of the two disease management programmes (DMP Diabetes and DMP COPD). The documentation data are centrally recorded and processed by the DMP contracting parties. On the basis of these data:

- the coordinating physician receives reminders about the patient's upcoming appointments;
- the coordinating physician receives a feedback report containing information both on patients who are being treated in their practice and on all patients treated within the framework of the DMP;
- the relevant sickness fund reminds the patient about upcoming appointments;
- a quality report for all DMPs in a region is drawn up; and
- an evaluation is conducted by the sickness funds.

Participation in a DMP is voluntary, and the patient can drop out at any time. The only entry requirement for patients is their active participation.

The particular social situation of the patient (unemployment) is not specifically referred to in the guidelines for DMPs. However, the social situation is taken into consideration via the individual risk assessment required in the DMP and through the joint coordination of therapy goals. In addition, the coordinating physician always has the option of treating the patient outside the DMP framework. DMPs are standardized nationwide, but regional differences exist with regard to integrated care pathways (see Box 5.4 in Section 5.4.3 Inpatient care). So far, patients can only participate in integrated care projects in specific regions and with particular sickness funds in Germany, e.g. "*Gesundes Kinzigtal*" in Baden-Wuerttemberg (Gesundes Kinzigtal, 2020) or "*Gesundheit für Billstedt/Horn*" in Hamburg (Gesundheit für Billstedt und Horn, 2018).

5.3 Primary care

Ambulatory health care is mainly provided by private for-profit providers, including physicians, dentists, pharmacists, psychotherapists, midwives and allied health professionals, such as physiotherapists, speech and language therapists, occupational therapists, medical pedicurists and technical professions. Ambulatory physician care includes primary care (family physician care) which is mainly provided by GPs and secondary care provided by office-based specialists, whereas hospital services and tertiary care usually only take place in inpatient care settings (see Section 5.4 Specialized care).

Patients have free choice of physicians, psychotherapists, dentists, pharmacists and urgent/out-of-hour care services. Although patients covered by SHI may also choose other allied health professionals, access to reimbursed care is available only upon referral by a physician. About 42% of all SHI-affiliated physicians work as family physicians and in primary care. Although GPs are usually the patient's first point of contact with the health system, they are not official gatekeepers (see also Section 5.2 Patient pathways). However, GPs' coordinating competencies have been strengthened in recent years (see below).

According to data from the Federal Association of SHI Physicians, 44% of the 402 118 active physicians working in Germany in December 2019 (i.e. 177 826) worked in SHI-contracted ambulatory care. Of these, 127 636

worked as SHI-accredited physicians (including non-medically qualified psychotherapists), 40 828 as salaried physicians, and a further 9362 as hospital physicians who are authorized to provide specialized outpatient care. Solo practices are still the dominant setting in primary care, but over the last decade there has been a trend towards more group practices and GPs working in interdisciplinary medical care centres (*Medizinische Versorgungszentren – MVZ*). Between 2009 and 2018 the number of solo practices providing family care decreased by 16.5% while the number of GPs working in group practices and medical care centres increased by 3% and 117% respectively (Kassenärztliche Bundesvereinigung (KBV), 2019d). Thus, the number of salaried GPs at medical care centres or in group practices has increased more rapidly than the number of SHI-accredited GPs working on a self-employed basis (Bundesministerium für Gesundheit (BMG) 2020i).

In 2019, of the 149 710 ambulatory care physicians (excluding non-medically qualified psychotherapists), 63 097 (42%) were working as family physicians, of whom 34 757 were qualified in general practice (i.e. held a specialist qualification in general practice), 4203 worked as practitioners (physicians without any specialist qualification practising family medicine), 16 305 were family internists (specialists in internal medicine), and 7832 were paediatricians (see Table 5.1). The number of GPs decreased slightly (by 1%) between 2010 and 2019, whereas the number of practitioners without a specialization in general medicine decreased by 38%. Between 2010 and 2019 the number of all physicians working in family medicine increased by 4% compared to the total number of specialists, which increased by 11% (see Table 5.1). This trend is also confirmed in a report by the Advisory Council to Assess Developments in Health Care (*Sachverständigenrat im Gesundheitswesen – SVR*), which highlights that the relationship between family physicians and specialists is subject to increasing sub-specialization (Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen, 2014b). While before the turn of the millennium 60% of all ambulatory care physicians were still involved in family care and 40% in specialist care, the ratio had reversed by 2019.

In the early 2000s the federal government launched several initiatives to improve the status of family physicians. After physicians with a specialization in internal medicine and paediatricians were legally offered the opportunity to work as family physicians (*Hausärzte*) instead of specialists (*Fachärzte*) (§73 SGB V), the share of family physicians temporarily increased.

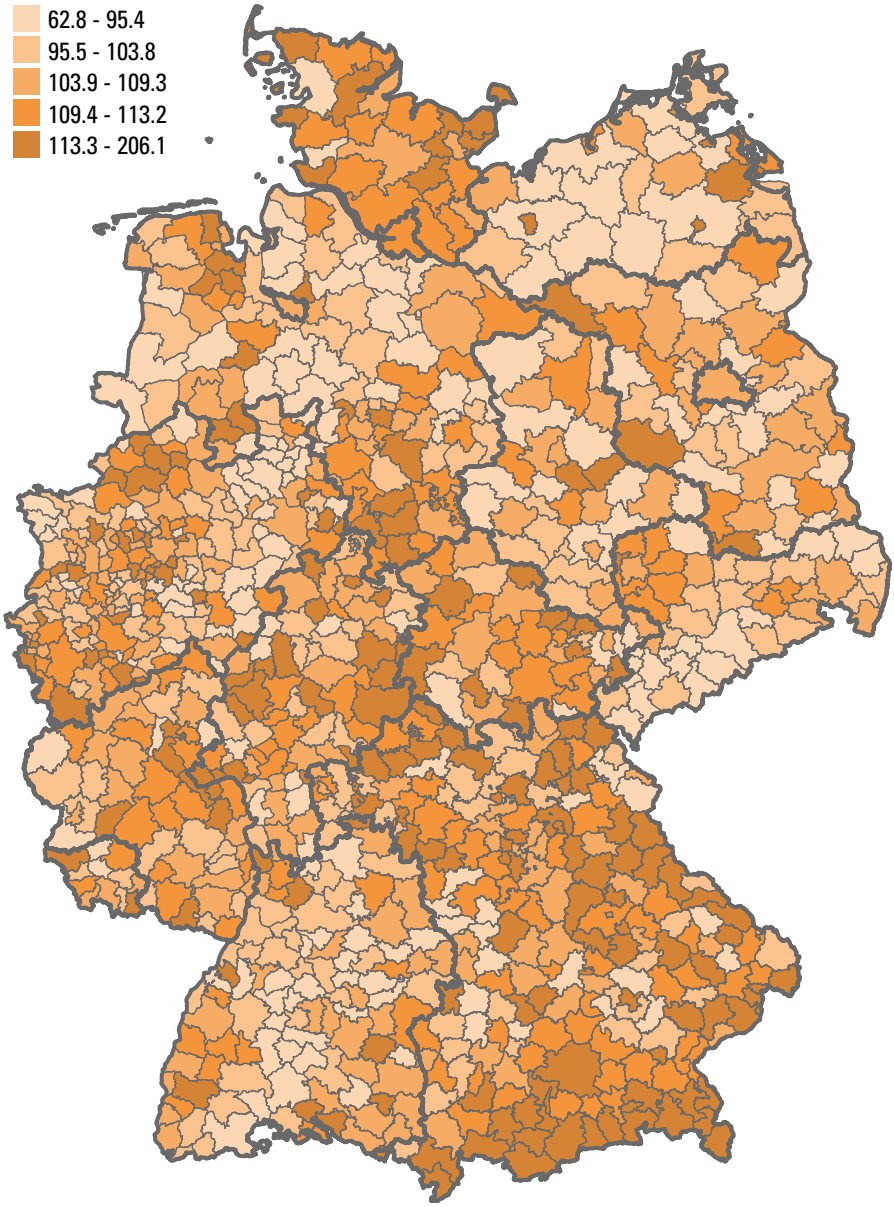
Since then, family physicians and specialists have had different reimbursable service profiles, different reimbursement pools and separate representation in the assemblies of delegates and the executive boards of the Regional Associations of SHI Physicians (see Section 3.7.1 Paying for health services). The SHI Care Structures Act (2012) further strengthened ambulatory care and introduced financial incentives for physicians – and particularly for family physicians – to work as SHI-affiliated doctors in undersupplied and rural areas, e.g. by lifting quantity-based limitations like the practice-based volume of standard services that could be delivered and through the introduction of surcharges for special services (see Section 3.7 Payment mechanisms and Chapter 6 Principal health reforms). Despite these efforts, a shortage of GPs is still noticeable in rural areas and the provision of family physician care in the community is not necessarily guaranteed. Figure 5.2 shows that the supply of family physicians in more rural areas does not reach 100% of the needs-based planning ratios established by the Federal Joint Committee, while other areas exceed supply up to 207% in 2018.

According to OECD data on Germany, there were 9.9 outpatient contacts per capita in 2018, which is considerably higher than the EU average of 7.5 (OECD/European Observatory on Health Systems and Policies, 2019; OECD, 2020d). However, this is likely to be an underestimation as national surveys estimate higher numbers. The calculations of the Central Institute for SHI Physician Care (*Zentral-Institut für die kassenärztliche Versorgung – ZI*) identified 17.1 visits per person in ambulatory care, albeit this data refers to the year 2007 (Riens et al., 2012). In fact, the actual number of contacts with ambulatory physicians is difficult to determine. This is due to changes in the reimbursement mechanism of ambulatory care physicians in 2008 and the definition of a "case", i.e. a treatment case is registered only once per quarter, even if the patient contacts the doctor several times per quarter.

5.3.1 *Coordinating primary (and secondary) care*

Since 2004 sickness funds have been obliged to offer their insured the option of enrolling in a GP-centred model (*Hausarztzentrierte Versorgung*) (§73b SGB V), and some provide a bonus for complying with the gatekeeping rules. Participation in these models is voluntary for both providers and insured.

FIGURE 5.2 Coverage by family physicians as a percentage of needs based ratio, 2018



Source: Kassenärztliche Bundesvereinigung (KBV), 2018
Note: © Bundesamt für Kartographie und Geodäsie, 2020

According to data from the German Association of General Practitioners (*Deutscher Hausärzteverband*), 17 000 GPs participate in "GP-centred care models" and about 5.4 million insured had subscribed in 2020 (Deutscher Hausärzteverband, 2020).

To improve the coordination of services provided by family physicians and specialists, structured treatment programmes, called Disease Management Programmes (DMPs), were introduced in 2003. DMPs aim to organize the treatment and care of chronically ill patients across the boundaries of individual service providers, in line with individual patients' requirements, and in a more efficient manner. Health care services for patients registered with one or several DMPs are provided using evidence-based guidelines. In contrast to integrated care, which is aimed at cross-sector patient care, DMPs primarily aim at coordinating different services at the ambulatory care level, and include rules for intra-sectoral treatment (e.g. referral to hospital treatment). The DMPs are based on a uniform contract between all sickness funds in a region and the regional physicians' association as well as a number of hospitals. Measures for quality assurance include standardized documentation, feed-back reports to physicians, patient information and reminder systems (see Box 5.3).

BOX 5.3 What are the key strengths and weaknesses of primary care?

Germany has a well-developed outpatient sector with a high density of GPs and good access. For the majority of the population, the closest GP is less than 1.5 km away. Patients have free choice of GPs and specialists and can access them directly without a referral. Primary care has always been dominated by practice-based physicians. More recently, there has been a trend towards more cooperative structures, e.g. interdisciplinary medical care centres. However, skill-mix and organization into multi-professional teams has played a minor role in Germany so far. Such changes are needed especially in rural areas in order to meet the requirements of an ageing and multimorbid population.

The traditionally strong separation of ambulatory primary and specialist care on the one hand and ambulatory and inpatient care on the other leads to fragmented and uncoordinated service provision, especially in the absence of a gatekeeping system. Incentives to enhance coordination and collaboration have been introduced over the past two decades, but the quality of ambulatory care (measured against avoidable hospital admissions) is still only moderate compared to other European countries (see Section 7.4 Health care quality).

5.4 Specialized care

5.4.1 *Specialized ambulatory care*

Ambulatory physicians offer almost all specialties; the most frequent ones are listed in Table 5.1. Except for a few specialties, e.g. radiology or laboratory services, patients can directly access ambulatory care specialists without a referral. Between 2010 and 2020 the total number of physicians in SHI care increased by 8%. However, the strength of this trend varied according to specialty: whereas the number of GPs decreased by 1%, the number of child psychiatrists increased by 28% and the number of internists by 23%.

Table 5.1 also provides information on two aspects linking the ambulatory and the hospital sectors. Firstly, around 2.9% of all SHI-affiliated physicians have the right to treat patients inside hospitals according to §121 SGB V. This is mainly the case for small surgical specialties in areas where the hospital has so few cases that a physician operating once or twice a week is sufficient. All other physicians transfer their patients to hospital physicians for inpatient treatment and receive them back after discharge (for example, post-surgical care is usually done by office-based physicians). Ambulatory-based specialists for ear, nose and throat medicine provided 26%, more than a quarter, of all hospital-attending physicians in 2019, followed by orthopedic surgeons (7.5%), gynaecologists (4%) and urologists (3%). Although this form of care is a promising approach to bridging the strong sector fragmentation between ambulatory and secondary care, the share of attending SHI physicians decreased by 26% between 2010 and 2019. Secondly, in 2019 in addition to office-based physicians, around 9141 hospital physicians were accredited to treat ambulatory SHI patients. These accredited physicians are mainly heads of hospital departments who are allowed to offer certain services or to treat patients during particular times (e.g. when practices are closed). Their number has also decreased.

5.4.2 *Day care*

Day care is defined as medical services delivered to patients who are formally admitted to hospital for diagnosis or treatment (including pre-inpatient and

TABLE 5.1 Specialist physicians providing ambulatory care in SHI, 2000–2019

	PHYSICIANS PROVIDING AMBULATORY CARE IN SHI[a]			OF THESE: AUTHORIZED TO TREAT INPATIENTS			HOSPITAL PHYSICIANS OF THESE: AUTHORIZED TO TREAT SHI PATIENTS ON AMBULATORY BASIS		
	2010	2019	CHANGE	2010	2019	CHANGE	2010	2019	CHANGE
General practitioners	35 227	34 757	-1%	79	28	-65%	40	39	-3%
Anaesthetists	3 838	3 992	+4%	21	64	+205%	744	507	-32%
Ophthalmologists	5 672	6 369	+12%	594	458	-23%	133	182	37%
Surgeons/Orthopaedists	12 092	13 827	+14%	1 293	1 033	-20%	2 232	2 222	0%
Gynaecologists	11 550	12 611	+9%	1 077	508	-53%	990	1 167	18%
Ear-nose-throat physicians	4 304	4 560	+6%	1 532	1 184	-23%	206	211	+2%
Dermatologists	3 722	3 961	+6%	22	15	-32%	119	144	+21%
Internists	23 401	28 732	+23%	319	291	-9%	2 484	2 009	-19%
Specialist internists	8 515	10 418	+22%						
Family internists	11 266	16 305	+45%						
Paediatricians	7 080	7 832	+11%	25	19	-24%	835	845	+1%
Child psychiatrists	868	1 108	+28%	0	0		39	26	-33%
Laboratory specialists	1 008	1 303	+29%	0	0		56	24	-57%
Neurologists/ Psychiatrists	5 551	5 955	+7%	11	11	0%	575	527	-8%
Psychotherapists[b]	5 420	6 219	+15%	4	1	-75%	122	75	-39%
Radiologists	4 239	4 340	+2%	9	5	-44%	750	616	-18%
Urologists	3 042	3 426	+13%	535	102	-81%	246	284	+15%
Specialist physicians[c]	**78 075**	**86 613**	**+11%**						
Practitioners	6 824	4 203	-38%						
Family physicians[d]	**60 397**	**63 097**	**+4%**						
Total (family physicians + specialist physicians)	**138 472**	**149 710**	+8%	5 868	4 332	-26%	10 022	9 141	-9%

Source: Kassenärztliche Bundesvereinigung (KBV), 2014, 2019d

Note: [a] includes SHI-affiliated and authorized physicians, partner-physicians and salaried physicians who worked in ambulatory care settings (practice and medical care centres); [b] only medically qualified psychotherapists; [c] all specialists excluding general practitioners, family internists and paediatricians; [d] including practitioners, general practitioners, family internists and paediatricians.

post-inpatient care) with the intention of discharging the patient the same day. In 2018, 710 hospitals (37% of all hospitals) provided a total of 28 224 day-care places. About 72% of these places (n=20 297) were in units for psychiatry (including childhood and adolescent psychiatry and psychosomatic units), another 9% (n=2465) in geriatric units and 6% (n= 1707) of places in units for internal medicine (Statistisches Bundesamt, 2020g).

Due to the strict separation between the ambulatory care and the hospital care sectors, hospital services in Germany were restricted to inpatient settings for a long time (see Box 5.4). In the last 20 years the scope for hospitals to provide outpatient services has expanded significantly. Since 2004 hospitals have been able to provide care in specialties where the law (§116a SGB V) stated there was under-provision (for example, pneumology and rheumatology). Furthermore, ambulatory care for patients with certain rare diseases (e.g. tuberculosis, cystic fibrosis, Morbus Wilson) and diseases with severe progressive forms (e.g. HIV/AIDS, multiple sclerosis, oncological diseases), as well as highly specialized services (e.g. CT/MRI-aided interventional pain therapy), are areas that largely take place in hospital settings. The Strengthening Competition in SHI Act has further expanded this provision since 2007, allowing hospitals to deliver outpatient care services pursuant to §116b SGB V without prior authorization from the sickness funds insofar as the prerequisites for delivering these services are present and an application has been approved by the state government. The Federal Joint Committee regulates the details of the diseases involved, the scope of treatment and the requirements for participating hospitals. In addition, the Committee has listed criteria according to which new diseases are to be selected for hospital-based outpatient care. The SHI Care Structures Act (2011) replaced this §116b SGB V and introduced a new care sector – "highly specialized medical care provided by specialists in outpatient care" (*Ambulante spezialfachärztliche Versorgung – ASV*) – with the aim to promote cross-sectoral and interdisciplinary care for special complex diseases, which are difficult to treat and need special equipment. It provides a uniform legal basis for SHI-affiliated practice-based specialists in ambulatory care and hospital outpatient departments in terms of organization and financing. The Federal Joint Committee regulates the details for this highly specialized care, especially the conditions for participation of the interdisciplinary treatment teams and the necessary quality prerequisites.

Total expenditure for outpatient hospital care has risen continuously since 2008. In 2015 treatment for patients according to §116b SGB V (under the new definition for outpatient care) was billed for the first time. Expenditures for hospital outpatient care under the old definition and according to the ASV guideline increased from € 202 million in 2015 to € 247 million in 2019, corresponding to an increase of 22%. Expenditure on ASV by physicians in practice-based ambulatory care who are authorized to treat patients in hospitals rose from € 1.6 million in 2015 to € 22.3 million in 2019 (Bundesministerium für Gesundheit (BMG), 2020f).

Another field of ambulatory services within the hospital sector is pre- and post-inpatient care (§115a SGB V). The share of hospitals offering pre- or post-inpatient care has increased steadily. Between 2003 and 2017 the number of cases of pre-inpatient care increased from 1.42 million to 4.7 million. During the same period the number of cases of post-inpatient care increased from 0.75 million to 1.1 million (Statistisches Bundesamt, 2018a).

Although hospitals have been allowed to offer surgery on an ambulatory or day-case basis only since 1993 (§115b SGB V), day-case surgery is not new in Germany. Due to the separation of the hospital and the ambulatory care sectors, surgeons, ophthalmologists, orthopedic surgeons and other office-based specialists have performed minor surgery for a long time. The number of ambulatory surgeries has increased over the last decade. In 2017 almost 2 million surgeries according to §115b SGB V took place in a total of 1175 hospitals. In 2019 € 0.65 billion of SHI expenditure was spent on ambulatory surgeries in hospitals and another € 2.05 billion on surgeries provided by SHI-affiliated physicians in practice-based ambulatory care, which together accounts for 1.1% of SHI spending in that year (Bundesministerium für Gesundheit (BMG), 2020f).

5.4.3 *Inpatient care*

Planning and regulation of treatment facilities for inpatients are carried out by ministries of health – and in the case of university hospitals, by ministries of science – at the state level, but based on the federal legal framework of the Hospital Financing Act (see Sections 2.7 Regulation and 3.7.1 Paying for health services). This applies to highly specialized "tertiary" care (for

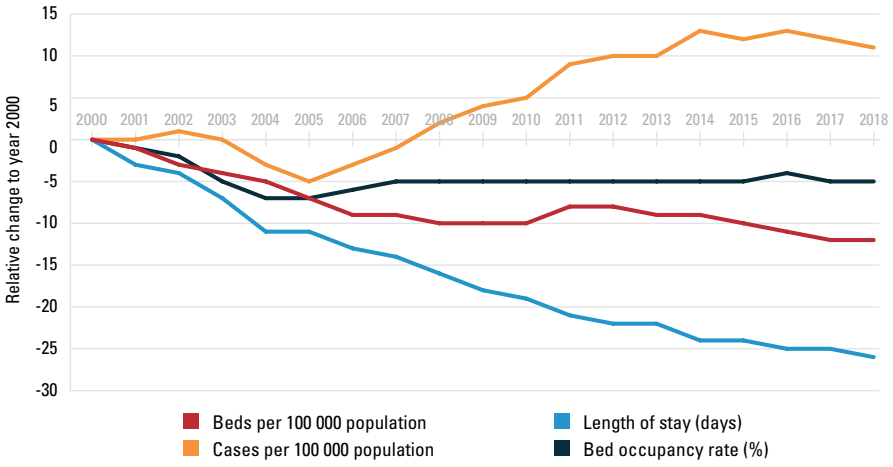
example, neurosurgery) as well as regular secondary inpatient care. Planning units are institutions, departments and, in certain states, beds. The content and methods of the hospital requirement plans differ substantially among states. Regulation of capacities is planned according to the principles of need (for specific departments) and performance, but criteria differ substantially. Several states define capacities as sufficient if the departments available for one specialty in a given municipality or county had an occupancy rate of 80%. Moreover, close to 90% of the population can reach a general hospital in less than 20 minutes (Klauber et al., 2015). Hospital care, however, is not always and everywhere proportionate to need. For example, the average bed occupancy rate across the country is less than 80%. As a result, the economic situation of hospitals is in some cases critical, especially against the background of dwindling investments in hospital infrastructure by the states over the last years (see Section 4.1.1 Infrastructure, capital stock and investments). Thus, in recent years several of Germany's governments have sought advice from research institutes on how to define need and interpret hospital performance.

The Reform of Hospital Structures Act (2015) determined to strengthen the link between hospital planning and hospital payment to quality of care, with the aim of optimizing need-oriented patient care. Furthermore, additional or reduced reimbursement will be agreed for some performance areas with exceedingly high or low quality. If quality is poor, the states may formally exclude the respective hospital from hospital planning (i.e. from the state hospital requirement plan) but it is unclear to what extent this occurs in practice. For example, in a directive the Federal Joint Committee defined a total of 11 indicators relating to gynaecological surgery, obstetrics and breast surgery which are evaluated by the IQTIG annually. In 2018 there were 62 irregularities in 1063 evaluated hospitals, but without consequence regarding hospital planning (Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG), 2019).

With 602 hospital beds per 100 000 population, Germany had the second highest ratio of hospital beds per inhabitant (after Bulgaria) in the EU in 2017 (Eurostat, 2020a). A fifth (18%) of all hospitals were in the state of North Rhine-Westphalia, providing almost a quarter (24%) of all hospital beds. In terms of bed density, however, most beds per 100 000 population were in the state of Bremen (761 beds), followed by Thuringia (740 beds) and Saxony-Anhalt (717 beds).

Figure 5.3 shows the development of inpatient care (both structure and utilization data) for hospitals in Germany between 2000 and 2018. During this period the per capita number of general and psychiatric hospital cases rose by 14%, to 23.7 cases (admissions) per 100 population. During the same period the total number of beds decreased by 12%, from 681 beds to 601 beds per 100 000 population in 2018 (see also Section 4.1.1 Infrastructure, capital stock and investment). Although the number of cases increased and the number of beds decreased, occupancy rates also decreased from 81.5% in 2000 to 77.1% in 2018. This resulted from the relatively strong decrease in the average length of stay, from 9.7 to 7.2 days. The trend of increasing admissions was pronounced in the period 2007 to 2014, while the trend of decreasing length of stay is an old phenomenon not as strongly related to the introduction of DRGs for hospital payment as is often assumed (see Section 3.7 Payment mechanisms).

FIGURE 5.3 Changes in the structure and utilization of inpatient care, 2000–2018



Source: Authors' compilation based on Statistisches Bundesamt, 2017, 2018a, 2020g

The high density of hospitals generally ensures good availability of hospitals and access to hospital care, but with regional variations. Almost 90% of the population living in urban areas in Germany could reach the nearest acute care hospital within 15 minutes in 2016. In rural areas only 64% of the population could do so (Statistische Ämter des Bundes und der Länder, 2020). However, good availability and accessibility do not always mean high quality assurance. In general, many small hospitals provide inpatient services

without adequate human resources (e.g. 24-hour availability of a range of specialists) or the technical equipment (e.g. computed tomography scanners, intensive care units) necessary to provide high quality of care. While hospital planning still has little consideration for quality of care, in recent years Germany has introduced financial incentives for more outcome-related services (see Section 3.7 Payment mechanisms).

BOX 5.4 Are efforts to improve integration of care working?

The German system separates provision of hospitals and ambulatory care both in terms of organization and financing, leading to a clear split between these two types of care. Despite ongoing efforts to promote a patient-centred approach to care, there is a lack of incentives to enhance cross-sector collaboration.

Integrated care as a form of selective contracting between sickness funds and providers was introduced with the SHI Reform Act of 2000 and further strengthened with the SHI Modernization Act in 2004. Integrated care aims at cross-sector patient care to enhance service quality (see Section 7.4 Health care quality) and cooperation between different providers within a sector and across sectors. Integrated care contracts do not require the approval of the Regional Associations of SHI Physicians.

Sickness funds are required to negotiate selective contracts with single providers or a network of providers, such as physicians, hospitals, rehabilitative institutions and other health care professionals, as well as with pharmaceutical and medical device manufacturers. The contracting parties of an integrated care contract may decide to take over the guarantee of service provision for the insured population from the Regional Associations of SHI Physicians. However, participation in integrated care projects is voluntary for the insured. As registering integrated care projects is not mandatory, there are no current figures about the number of contracts. According to latest available data from 2011, the number of contracts was 6339 with around 1 926 000 participants and a total expenditure volume around € 1.35 billion (Busse et al., 2017b).

Disease Management Programmes (DMPs) were introduced in 2003 with the intention to organize the treatment and care of chronically ill patients across the boundaries of individual service providers. DMPs primarily aim at coordinating services at the ambulatory care level. As of June 2020, 9253 disease management programmes (up from around 6000 in 2005) covering ten diseases (diabetes type 1 and type 2, asthma, chronic obstructive lung disease, coronary heart disease, heart failure, breast cancer, depression, chronic back pain and osteoporosis) had more than 7 million insurees enrolled (partly in more than one programme), which is more than three times as many insurees compared to 2005 (Bundesamt für Soziale Sicherung, 2020a). The Federal Joint Committee has already decided on the requirements for DMPs for chronic heart failure, chronic back pain, depression and osteoporosis, which are going to start in the near future.

5.5 Urgent and emergency care

Urgent, out-of-hours and emergency care are provided via three main settings: ambulatory, inpatient and emergency medical services (EMS). Legally, the regulation and provision of emergency medical services are competences delegated to the states – and there are substantial variations with respect to how states organize and finance such services. The states are responsible for ensuring adequate EMS coverage across their territory and regulate most aspects of provision through their own "EMS law" (*Rettungsdienstgesetz*).

5.5.1 *Urgent and out-of-hours care*

The delivery of urgent and out-of-hours care is the responsibility of the respective Regional Association of SHI Physicians. Ambulatory physicians (SHI GPs and specialists) provide the major part of urgent care during regular practice hours or during out-of-hours services in their practice (and, if necessary, refer patients to other health care providers for subsequent treatment). Home visits are provided by the majority of GPs, but only by a few specialists.

Out-of-hours services are coordinated and organized by the Regional Associations of SHI Physicians as part of their obligation to guarantee service availability for ambulatory care (§75 (1) SGB V). In 2012 the nationwide telephone number 116117 was introduced, to coordinate patients and ensure they reach the most appropriate out-of-hours care service (Kassenärztliche Bundesvereinigung, 2020g). Except in cases of a life-threatening condition, telephone counselling, practice visits and home visits are provided by the respective physician in charge. Increasingly, out-of-hours services are also offered by ambulatory physicians at specific Regional Associations of SHI Physicians facilities, mostly at local hospitals (*Portalpraxis*), with the aim of improving access to care and avoiding unnecessary hospital visits.

Both SHI and PHI patients are entitled to publicly provided out-of-hours services. While the medical services provided by the physicians are regularly financed by the Regional Associations of SHI Physicians (see Section 3.7.1 Paying for health services), the logistical costs for organization and technical implementation are financed by all GPs and specialists in ambulatory care in the respective region. Moreover, several private (for-profit)

out-of-hours services provide physician care for PHI patients and/or patients paying out of pocket.

5.5.2 *Emergency rescue and life-threatening care*

Life-threatening emergencies are treated by rescue and emergency medical services and include emergency rescue, emergency medical care and patient transport (including air, mountain, cave and water rescue). Emergency medical services are coordinated and monitored by about 250 centres across the country (called "rescue control centres" or "integrated control centres"), which can be reached via the Europe-wide emergency telephone number 112 (Fachverband Leitstellen e.V., 2014). The control centres differentiate between the need for rescue care and emergency physician care according to criteria listed in the "emergency doctor indication catalogue" (*Notarztindikationskatalog*). The predefined maximum times for emergency medical services (*Hilfsfrist*) to reach people in need vary among states, ranging between 5 and 20 minutes after receiving the phone call (Schehadat et al., 2017). Emergency rescue care is usually regulated by states' interior ministries and most states delegate organization and delivery to the counties. Within the framework of the EMS law, local communities may accredit, regulate and plan for capacities via integrated public providers (mostly integrated with fire protection) as well as through contracted private rescue providers.

Among private providers, priority is clearly given to non-profit providers over profit-making providers in legislation as well as in practice. Non-emergency transport is rarely performed by municipalities themselves but is outsourced to private non-profit or for-profit providers. The latter play a bigger role in this section of care than in other parts of the emergency care market, but welfare organizations still have priority in most states over private for-profit providers.

Significant differences can be found between urban and rural areas, as well as between states and municipalities regarding requirements for qualification and competences. Emergency medical services are mostly provided by the fire departments but are also increasingly provided by the four aid organizations (*German Red Cross*, *Johanniter-Unfall-Hilfe*, *Malteser Hilfsdienst* and *Arbeiter-Samariter Bund*). These organizations are also commissioned

with general emergency preparedness and response, and usually provide emergency medical services during public events.

The two predominantly used vehicle types in Germany are ambulances (*Rettungswagen – RTW*) and emergency physicians' vehicles (*Notarzteinsatzfahrzeug – NEF*). Ambulance crews normally consist of two qualified crew members. Teams in emergency physicians' vehicles usually consist of one physician, often with special training and a qualification as an "EMS physician", and one paramedic. Physicians can attend special training to qualify as an EMS physician. The role of paramedics in rescue care in Germany includes multiple qualifications, such as "emergency paramedics" (*Notfallsanitäter – NFS*), "rescue assistants" (*Rettungsassistent*) and "rescue paramedics" (*Rettungssanitäter*). After the implementation of the emergency paramedics qualification with the Emergency Paramedics Act, 2013 (*Gesetz über den Beruf der Notfallsanitäterin und des Notfallsanitäters*), the training of rescue assistants was discontinued. Control centres primarily send ambulances and emergency physicians' vehicles, but dispatch of the fire department, police, first responders, rescue helicopters and special vehicles (such as STEMO-vehicles for thrombolysis) is also possible according to availability. Special vehicles can vary between urban and rural regions or states and municipalities, but rescue via ambulance or emergency rescue helicopters is available throughout Germany.

Financing rescue care follows a dual principle: while recurrent expenditure is financed by SHI or PHI or out of pocket, capital financing is mainly a task for the states. For hospital-based emergency care, the dual principle also applies, albeit according to the general rules of hospital financing and planning (see Section 3.7.1 Paying for health services). With respect to capital financing, there are variations among the states (see also Busse & Blümel, 2014; Busse et al., 2017b). Patient "transport" (§60 SGB V) is based on a reimbursement system with a retrospective fee-for-service. Co-payments account for 10% (minimum of € 5, maximum of € 10) and apply for non-emergency and emergency transport services (see Section 3.4 Out-of-pocket payments). In addition, non-rescue patient transport has been excluded from SHI. A few exceptions have been outlined by the Federal Joint Committee, including the transport of patients in need of challenging ambulatory treatments such as chemotherapy and haemodialysis (Gemeinsamer Bundesausschuss, 2020a).

5.5.3 *Forthcoming reforms*

Emergency care in Germany is strongly characterized by sectoral segregation. The emergency medical services, the emergency departments of hospitals and the rescue services work often in parallel and are not well connected. According to the obligation to guarantee service availability, urgent ambulatory care should be provided 24/7 by physicians. However, patients often make use of the emergency departments of hospitals or the emergency medical services, even though from a medical point of view they could be provided with ambulatory care. One reason for this is that responsibilities among the various providers are not clear. Another is that patients seem to have expectations to access better and faster care. Hence, the patient's pathway depends primarily on the patient's own assessments, expectations and wishes.

Most recently, urgent and emergency care has been identified as needing reform (Kassenärztliche Bundesvereinigung (KBV), 2020c). Reform plans included the Reform of the Emergency Care Act. The legislation's aim was to promote joint emergency management systems via the telephone number 112 or 116117, and to establish integrated emergency centres (*Integriertes Notfallzentrum – INZ*) in selected hospitals to differentiate whether patients should be treated in inpatient or ambulatory facilities. The reform has been postponed due to the more immediate challenges presented by the COVID-19 pandemic (Bundesministerium für Gesundheit (BMG), 2020l, 2020m).

BOX 5.5 Patient pathway in an emergency care episode

The patient pathway in an emergency care episode in Germany can have several starting points: (1) through self-admission to an emergency department of a hospital; (2) directly via an emergency number (112 or 116117, the latter also via mobile application); or (3) through contact with a physician in ambulatory care (see Figure 5.4).

In the first case, a patient may use private or public transport and attend the admission counter of an emergency department in a hospital. Upon arrival, the patient is registered and triaged by a triage nurse and finally admitted and treated. Patients may also present themselves at urgent care centres (ambulatory care) in selected hospitals with or without an appointment, where physicians provide the required ambulatory care.

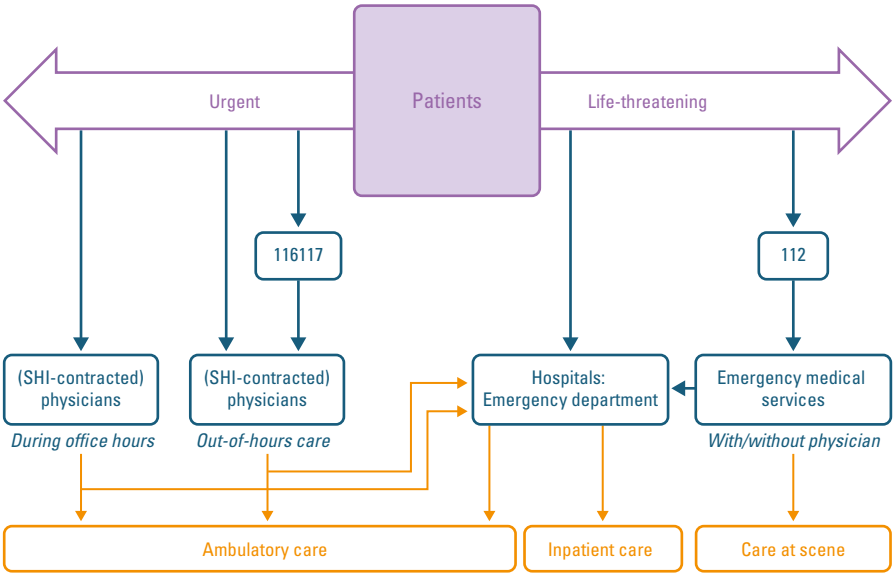
In the second case, a patient may contact emergency or urgent care numbers. There is a number for time-critical and life-threatening acute emergencies (112)

which is associated with EMS, as well as a number for non-acute but still urgent cases (116117), associated with urgent ambulatory care. In both instances, trained control centre personnel answer calls to pre-assess the patient with the help of standardized algorithms and dispatch appropriate teams to the scene, whilst also assisting with first aid advice via the telephone if appropriate. Upon arrival at the scene, the ambulance crew medically assess the patient. If possible, German EMS follows a "Stay and Play" strategy, i.e. stabilizing the patient at the scene for subsequent transport. Once the patient is stabilized, most EMS laws require "the closest suitable hospital to be chosen as the transport destination". At the hospital the ambulance crew present the patient to either a nurse or a physician.

For non-emergency, urgent cases (116117) a physician visits the patient usually within a two- to three-hour period and assesses their condition. Following this assessment, the physician can refer the patient to further ambulatory or inpatient care and prescribe patient transport services, if necessary.

In the third case, patients may also access a physician directly via out-of-hours care services, either via telephone counselling, in the SHI physician's practice, via a home visit by a physician, or in specific facilities for urgent ambulatory care at hospitals. The physician can treat the patient, but can also refer the patient to further ambulatory care or to inpatient care if necessary. Depending on the circumstances, transport to a hospital happens either via patient transport services, emergency services or, if appropriate, through the patient's own means. Access to the hospital happens through the emergency department.

FIGURE 5.4 Patient pathways in emergency care



Source: Based on Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen, 2018

5.6 Pharmaceutical care

This section explains the distribution of pharmaceuticals, SHI-specific provisions on pharmaceutical spending caps, prescription data and controls on physician prescribing behaviour, as well as expenditure trends in various segments of the pharmaceutical market and current reforms. The process of licensing pharmaceuticals, including them in the SHI benefit catalogue and determining their prices is described in detail in Section 2.7.4. Regulation and governance of pharmaceuticals.

5.6.1 *The pharmaceutical market (SHI and PHI)*

The pharmaceutical industry in Germany is among the most powerful among developed countries and contributes significantly to the export market. In 2018 119 535 people were employed in 364 pharmaceutical-producing companies. The industry recorded a total turnover of € 54.0 billion in 2018, € 17.6 billion of which was earned in the domestic market and € 36.4 billion (67% of turnover) from exports (Statistisches Bundesamt, 2020i).

Looking at production size, Germany ranked third in Europe after Switzerland and Italy in 2016 (European Federation of Pharmaceutical Industries and Associations, 2018). In 2018 € 60 billion was spent on medicines, which accounts for 15.4% of total health expenditure. Of the total pharmaceutical expenditure in 2018, 72.2% was spent by SHI, 6.7% by PHI companies, 15.9% by private households' out of pocket and the remaining 5% by employers and other social security schemes (Statistisches Bundesamt, 2019c).

Around 83% of pharmaceutical expenditure was spent in community pharmacies and 9% within acute hospital care (with the remaining 8% in other sectors, e.g. rehabilitation) (Statistisches Bundesamt, 2019g). The vast majority of the expenditure (88%) within community pharmacies in 2018 was spent on prescription drugs and 12% was on over-the-counter (OTC) medication. In the case of OTC medicines, 81% was spent on self-medication and 19% on OTX drugs (prescribed non-prescription) (Bundesverband der Arzneimittel-Hersteller, 2019).

An analysis of prescriptions is undertaken annually (Pharmaceutical Prescription Report – *Arzneiverordnungs-Report*) by a sickness fund-affiliated

scientific institute. This report is based on virtually all drug prescriptions in the ambulatory care sector, but it does not include prescriptions paid by PHI, drug supply in hospitals or OTC drugs. It can be of value for assessing trends in the prescription behaviour of physicians (Schwabe et al., 2019). In 2018 people covered under SHI were each prescribed an average of 569 defined daily doses (DDDs). Predictably, the prescription rate varied significantly by age, with an average of 76 DDDs among those aged 20–24 and 1742 DDDs among those aged 85–89. Children under 4 received 203 DDDs and people over 90 received 1522 DDDs per year. In 2018 each SHI-affiliated physician prescribed an average of 3123 "ready preparations" in 196 000 DDDs, with an average turnover of € 202 700. The greatest number of prescriptions were issued by GPs (49.2%) and internists (20.5%), followed by paediatricians (5.9%), gynaecologists (2.2%) and ophthalmologists (2.0%). In 2018 the average turnover was around € 64.91 per prescribed package, the costs varying by specialty from € 24.90 for paediatricians, € 34.44 for GPs and € 65.10 for ear, nose and throat (ENT) physicians to about € 473.29 for gastroenterologists and € 721.95 for oncologists/haematologists (Schwabe et al., 2019).

5.6.2 *Distribution of pharmaceuticals*

Pharmaceuticals may be dispensed by hospitals as well as through institutional and "public" (though privately owned) community pharmacies. If pharmaceuticals are not labelled "pharmacy-only", they can also be sold by drugstores, health food stores, supermarkets, food retail markets and pet shops, but this requires an "expertise examination" (*Sachkundeprüfung*) to be passed. The responsible Chamber of Industry and Commerce (*Industrie- und Handelskammer – IHK*) certifies expertise to entrepreneurs, representatives or sales staff by means of an examination according to §50 I of the Pharmaceutical Act (*Arzneimittelgesetz*) (Industrie- und Handelskammer Karlsruhe, 2020). This applies for vitamins, minerals and some phytotherapeutic products. Excluded from this "expertise examination" regulation are products such as healing waters, products intended for the prevention of pregnancy or sexually transmitted diseases, and disinfection products. Pharmacy-only products include all prescription pharmaceuticals and non-prescription items such as OTC drugs (e.g. paracetamol), nicotine-replacement items,

homoeopathic drugs and specific alternative medicines. Most pharmaceutical prescriptions are issued in the ambulatory care sector. Community pharmacies sold 1496 million packages in 2018, which included 744 million prescription packages and 752 million pharmacy-only products, with the former accounting for 87.5% of total turnover (Bundesverband der Arzneimittel-Hersteller, 2019).

There were 19 423 pharmacies in 2018, of which 4541 were branches. This equals a density of 23 pharmacies per 100 000 population (or 4274 population per pharmacy). Slight differences can be seen across the states, ranging from 21 pharmacies per 100 000 population in Bremen to 30 pharmacies per 100 000 population in Saarland. The number of community pharmacies in Germany has decreased by 10% over the last ten years (2008: 21 602 pharmacies) and is now at its lowest level since the mid-1980s (Bundesvereinigung Deutscher Apothekerverbände e.V., 2019).

Overall, 159 141 people worked in community pharmacies in 2018 (i.e. on average eight per pharmacy), of whom 52 048 were pharmacists with an average age of 47; 73.0% of these pharmacists were women. Another 2445 pharmacists worked in one of the 375 hospital pharmacies (Bundesvereinigung Deutscher Apothekerverbände e.V., 2019).

All "public" pharmacies are actually privately owned and operated by self-employed pharmacists who are mandatory members of pharmacists' chambers. Hospital pharmacies are allowed to deliver certain medications, especially chemotherapies, directly to office-based physicians. Office-based physicians may not dispense medications, with few exceptions. Pharmacists may run a maximum of four pharmacies, and the three branch pharmacies must be in the same or a neighbouring county as the main pharmacy. Authorized mail-order and online pharmacies need to have a mail-order licence (§11a Pharmacy Act (*Apothekengesetz*). They are subject to the same legal requirements and control mechanisms as traditional on-site pharmacies. In 2018, 2899 pharmacies had a licence as a mail-order pharmacy (approx. 15% of all pharmacies), but only about 150 operated a serious mail order business.

Mail order services are used predominantly to purchase OTC medicines: in 2018 only 8 million packages of prescription-only pharmaceuticals were sold by mail-order pharmacies, generating a turnover of € 300 million (compared with 736 million packages in community pharmacies with a turnover of € 30 462 million), while a total of 118 million packages of OTC medication

were sold via mail-order, with a turnover of € 910 million (compared to 747 million packages in on-site community pharmacies with a turnover of € 4220 million) (Bundesvereinigung Deutscher Apothekerverbände e.V., 2019).

5.6.3 *Spending caps and prescription controls in SHI*

The German benefits basket includes all licensed prescription pharmaceuticals and there is no positive list of SHI-covered pharmaceuticals. This means that new and often very expensive pharmaceuticals are reimbursed. Therefore, Germany relies on price mechanisms to regulate pharmaceutical care, such as mandatory discounts and internal reference price setting for groups of comparable medicines (see Section 2.7.4 Regulation and governance of pharmaceuticals).

The Healthcare Strengthening Act (2015) (see Section 6.1 Analysis of recent reforms) obliged each Regional Association of SHI Physicians to define individual target volumes for pharmaceuticals in each respective region and to establish procedures and performance audits (*Wirtschaftlichkeitsprüfung*) when physicians exceed these target volumes. According to the SHI Care Structures Act (2012), physicians exceeding the target volume by more than 15% and up to 25% are subject to an inspection procedure and advice (a consultation session) is offered. Physicians who exceed the target by over 25% are asked to justify the over-prescription and if their arguments are rejected they may be subject to remedying the situation, which mainly involves paying back an amount to the sickness fund. However, many Regional Associations of SHI Physicians follow the principle of "consultation before remedy", i.e. if the target volume is exceeded by more than 25% for the first time, no action is taken until at least one personal consultation has been offered. Where a remedy is called for, only the difference between the target volume and the prescribed volume needs to be paid back (Deutsches Ärzteblatt, 2020a, 2020b; Kassenärztliche Bundesvereinigung (KBV), 2020e).

Furthermore, the Regional Associations of SHI Physicians define quotas for the prescription of generics and biosimilars (either minimum or maximum quotas) and physicians meeting these are exempted from performance audits. This policy aims to promote the prescription of generics and biosimilars

(Kassenärztliche Bundesvereinigung (KBV) & GKV-Spitzenverband, 2019).

Every SHI-accredited physician is informed about the prescription behaviour of all physicians in their region, based on a federal information system on SHI-covered prescriptions known as GAmSi (*GKV-Arzneimittel-Schnellinformation*) (GKV-Spitzenverband, 2020a). They also receive a quarterly overview of the aggregate prescription volume of their specialist group in the region and their individual prescription volume. In this way, physicians can adjust their future prescription behaviour according to the provided data. The prescription feedback system, GAmSi, monitors the attainment of negotiated goals. It is based on indicators that have been agreed at federal level and has up to now focused on cost-containment rather than on quality, safety or equity: i.e. it monitors whether there has been an increase in the share of prescriptions as well as turnover from generics and parallel imports or a decrease in the share of disputed drugs and "me-too" drugs (analogous agents with no or only marginal difference from approved agents). In addition, the share of "special preparations" reflects access to high-cost drugs for certain diseases (e.g. for cancer care, AIDS, in reproductive medicine and after organ transplantation).

5.6.4 *SHI expenditure and prescription behaviour*

The prescription volume according to defined daily doses (DDD) amounted to 41.4 billion DDDs in 2018, which represents an increase of 0.1 billion DDDs (+0.3%) compared with 2017 and 9.1 billion DDDs (+28%) since 2008. This means that every SHI insuree, on average, received 569 DDDs – or 1.5 per day – in 2018. The total DDD volume of generic products was 35.8 billion DDDs in 2018, a decrease by 0.4 billion (-1.6%) compared with 2017. The total DDD volume for non-generic products amounts to 2.7 billion DDDs, a decrease of 0.1 billion (-3.5%) since 2017 (Schwabe et al., 2019).

While a DDD of patent-protected pharmaceuticals cost about € 4.38 in 2018, generics were only € 0.16 based on list prices. Generics amounted to 9.3% of SHI expenditure on pharmaceuticals in 2018, covering 78% of the defined daily doses (Pro Generika e.V., 2019). Data reveals an increasing readiness among physicians to prescribe generics, amounting to 87% of all

prescriptions in 2018 (Schwabe et al., 2019). According to OECD data from 2017, Germany (82.3%) had one of the highest shares of generics (volume) in the reimbursed pharmaceutical market among EU and OECD countries (see Box 5.6), only surpassed by the UK (85.3%). At the same time, the share of generics (value) was 34.6% in Germany, which was below Austria (50.2%) and the UK (36.2%) (OECD, 2020d).

5.6.5 *Current reforms in pharmaceutical care*

Current reform plans include a focus on the distribution of pharmaceuticals and aim to improve access to medicines, e.g. via electronic prescriptions, repeat prescriptions, and fair competition between online pharmacies and local on-site pharmacies. The Act for More Safety in the Supply of Pharmaceuticals (2019) (*Gesetz für mehr Sicherheit in der Arzneimittelversorgung*) aims to facilitate cooperation between federal and state authorities, regulate pharmaceutical manufacturers, provide information to the public about recalls of pharmaceuticals, and prepare for the introduction of electronic prescriptions (Bundesministerium für Gesundheit (BMG), 2019c). The Measles Protection Act (2020) (*Gesetz für den Schutz vor Masern und zur Stärkung der Impfprävention*) (see Section 5.1 Public health) introduces the so-called "repeat prescription", which allows pharmacies to dispense a pharmaceutical up to three times for people who regularly need certain pharmaceuticals (Bundesministerium für Gesundheit (BMG), 2019a), thus supporting the provision of pharmaceuticals to people with chronic conditions. The Strengthening Local Pharmacies Act (*Apothekenstärkungsgesetz*) was passed by the cabinet in July 2019 and aims at ensuring fair competition between online pharmacies and local on-site pharmacies. Once the Act comes into force, prescription pharmaceuticals must be provided at every pharmacy for the same price for people insured with SHI (fines of € 50 000 apply for each violation). Pharmacies may also offer additional services, such as flu vaccinations and courier services, and the remuneration of night and emergency services will be strengthened (Bundesministerium für Gesundheit (BMG), 2019b).

BOX 5.6 Waste in pharmaceutical spending

Germany has the highest per capita expenditure on pharmaceuticals in the EU (OECD, 2019; Panteli et al., 2016). Between 2004 and 2015 the consumption of prescribed defined daily doses (DDD) increased by more than 50% (Busse et al., 2017b). This has been raising concerns about oversupply and adequacy of care (see Section 7.6 Health system efficiency). Hence, measures were implemented to address these rising expenditures and to focus on the efficiency of pharmaceutical care (OECD/European Observatory on Health Systems and Policies, 2017, 2019). The early benefit assessment was introduced in 2011 and requires manufacturers of newly licensed pharmaceuticals to prove the potential added benefit over existing pharmaceuticals to the Federal Joint Committee in the first 12 months after market authorization (see Section 2.7.4 Regulation and governance of pharmaceuticals). The Federal Association of Sickness Funds negotiates a reimbursement amount with the manufacturer for pharmaceuticals with added benefit. This price-setting mechanism aims to ensure that pharmaceutical prices are economically efficient without inhibiting innovation. However, during the pharmaceutical's first year on the market, manufacturers can determine the price freely and without restriction. This can lead to high SHI expenditure for some innovative medicines (OECD/European Observatory on Health Systems and Policies, 2019).

Although pharmaceutical prices are high, Germany has been successful at shifting pharmaceutical consumption to generics. The market shares of generics by volume and by value are among the highest in comparison with other EU and OECD countries. Despite the constant increase in the volume of DDDs for generics in recent years, expenditure per DDD for generics decreased (Schwabe et al., 2019; OECD, 2020d). Hence, despite the increased use of generics, the overall volume expansion of pharmaceuticals (including branded medicines) means that there has not been a decrease of overall SHI expenditures for pharmaceuticals. Pharmacists have to dispense a cheaper pharmaceutical with the same active ingredient unless the prescribing physician has excluded this by marking "aut idem" on the prescription (see Section 2.7.4 Regulation and governance of pharmaceuticals).

The dispensing of individual tablets (*Auseinzelung*) from the usual pack sizes by the pharmacist is another measure introduced to promote cost-saving through the Strengthening Competition in SHI Act.

Attempts to promote rational prescribing focus mainly on the safety of pharmaceuticals, such as the guideline on strategies to ensure rational use of antibiotics in hospitals (Deutsche Gesellschaft für Infektiologie e.V., 2018) or information for physicians about rational prescribing from the Federal Association of SHI Physicians (Kassenärztliche Bundesvereinigung (KBV), 2020b).

5.7 Rehabilitation and intermediate care

5.7.1 *Rehabilitation*

Rehabilitation falls under the responsibility of SHI (for employees), statutory retirement insurance (for pensioners) or accident insurance (in the event of an accident at work, or an occupational disease) (Bundesministerium für Gesundheit (BMG), 2018b). In SHI medical rehabilitation services belong to the health care services to which the insured are entitled under §27 SGB V. The objective of rehabilitation measures is to eliminate, alleviate and prevent the worsening of a condition, or to relieve the consequences of disablement or the need for constant care. If treatment within an ambulatory setting is not sufficient, services are provided in a day-clinic or inpatient rehabilitation facility. For inpatient care, insured people are liable for a co-payment (see Section 3.4 Out-of-pocket payments) of maximum € 10 per day (the amount is income-related) to a maximum of 42 calendar days per year (Deutsche Rentenversicherung, 2020).

In addition to SGB V, SGB IX is applicable, which regulates rehabilitation and the participation of disabled people. SHI (in accordance with §§5 and 6 SGB IX) is the payer for medical rehabilitation as well as financial maintenance and other complementary benefits. Medical rehabilitation services incorporate medical treatment by physicians, dentists and other allied health professionals; the provision of pharmaceuticals, bandages and dressing materials; therapies, which include physiotherapy, speech therapy, occupational therapy, and psychotherapy; the provision of therapeutic appliances; and early support for disabled children or children threatened with disablement. Financial maintenance and other complementary benefits include cash benefits, such as a health allowance, injury allowance, bridging allowance or maintenance allowance.

After an SHI-accredited physician prescribes the rehabilitation measures for patients, the SHI Medical Review Board examines a random sample (i.e. every fourth application) according to guidelines to ensure a standardized assessment. The payer of the rehabilitation measure (i.e. SHI, statutory retirement insurance or accident insurance) approves the application. According to the German retirement insurance, of 1 610 054 medical rehabilitation applications submitted in 2018, 70% or 1 131 270 were accepted (Deutsche Rentenversicherung, 2019).

The responsible sickness fund determines the type, duration, scope, starting date and implementation of the provided service. With respect to the duration of the treatment, the sickness fund refers to the Framework Recommendations of the Federal Rehabilitation Council. In the event that there is no existing benchmark for a particular rehabilitation measure, the provision of ambulatory care must not exceed 20 treatment days, or three weeks in the case of inpatient care, and may only be repeated every four years.

Only rehabilitation institutions which have a service provision contract with SHI can provide services. Convalescent care for mothers or fathers together with a child is provided at an institution belonging to the Convalescent Care Centre for Mothers (*Müttergenesungswerk*). Geriatric rehabilitation takes place in inpatient, day-centres or ambulatory facilities and aims to enable older people to live in their familiar surroundings and to actively participate in life for as long as possible after an accident or illness. In 2017 there was a total of 1142 facilities for prevention and rehabilitation with a total capacity of 164 266 beds, and a workforce of 8801 physicians (full time equivalents – FTE) and 82 863 non-physician medical staff (FTE) for the treatment of 1 974 248 cases (Statistisches Bundesamt, 2019i).

Table 5.2 contains data on the use of inpatient care in prevention and rehabilitation facilities in Germany since 2000. Between 2000 and 2017 the number of cases, the number of beds and the average length of stay decreased. During the same period the bed occupancy rate increased from 76.1% in 2000 to 83.6% in 2017. The bed occupancy rate varies across regions, from 78.7% in Thuringia to 94.9% in Brandenburg (Statistisches Bundesamt, 2019i). Thus, this general trend is contrary to the trends in hospitals (see Section 5.4.3 Inpatient care).

TABLE 5.2 Use of inpatient care in prevention and rehabilitation facilities in Germany, 2000–2017

	2000	2005	2010	2015	2017	CHANGE FROM 2000 TO 2017
Beds/100 000 population	231	211.6	210	202	198.7	-14.0%
Cases/100 000 population	2 489.7	2 199.7	2 415.4	2 412.4	2 388.5	-4.1%
Length of stay (days)	25.8	25.8	25.4	25.3	25.4	-1.6%
Bed occupancy rate (%)	76.1	73.4	80.1	82.8	83.6	+9.9%

Source: Statistisches Bundesamt, 2019i

The Federal Joint Committee adapted the rehabilitation guideline to align with the Nursing Staff Empowerment Act (*Pflegepersonal-Stärkungsgesetz*) in 2019. Accordingly, the principle of "ambulatory care before inpatient care" no longer applies to informal carers. Hence, inpatient rehabilitation can be chosen for people who care for family members, even if rehabilitation in an ambulatory setting would be sufficient for them (from a medical point of view). Furthermore, the family members that they care for can be looked after at the same facility for the duration of the informal carer's rehabilitation (Gemeinsamer Bundesausschuss, 2020b, 2020c).

The Intensive Care and Rehabilitation Strengthening Act (*Intensivpflege- und Rehabilitationsstärkungsgesetz*) came into force in autumn 2020. This legislation includes provisions such as strengthening patients' right to choose the facility where they are treated, and allowing the prescribing physicians to determine the medical need for geriatric rehabilitation without the approval of the SHI (Bundesministerium für Gesundheit (BMG), 2020i).

5.7.2 *Intermediate care*

People in need of long-term care, who become dependent on full inpatient care for a limited time, for example because of a crisis at home, can access intermediate care in inpatient facilities for a maximum of 8 weeks per year. This has been part of the SHI benefits basket since 2016 and all people with long-term care grade II to V are eligible. The maximum amount per year covered by SHI is € 1612 (Bundesministerium für Gesundheit (BMG), 2017a).

5.8 Long-term care

Long-term care (LTC) has been managed by the statutory long-term care insurance (LTCI) since it was introduced in 1994 as Book XI of the Social Code. The statutory LTCI consists of the mandatory social LTCI (i.e. the public scheme) and mandatory private LTCI. Starting in 1995, all members of statutory sickness funds (including pensioners and the unemployed), as well as all people with full-cover private health insurance, were declared mandatory members of LTCI. This was the first time that mandatory membership was introduced for those with private health insurance – making it

the first statutory insurance with nearly population-wide membership. In 2018, 72.8 million (87.7%) were covered by mandatory social LTCI and about 9.2 million (11.1%) by mandatory private LTCI (Bundesministerium für Gesundheit (BMG), 2020n).

Similar to the SHI principles, members and their employers jointly contribute 3.05% of monthly gross income, that is, 1.525% each. Pensioners have to contribute the entire 3.05% from their pension. As a result of the Child Bonus Act (2005), childless SHI members who are 23 years and over pay a 0.25%-points increased contribution rate (a total contribution of 3.3%).

5.8.1 *Benefits covered by long-term care insurance*

In contrast to SHI, benefits are available upon application only in the statutory LTCI. The Medical Review Boards evaluate if the applicants are "in need of care" and place them into one of five grades (or deny care). Most of the private health insurers purchase this evaluation service from the Medical Review Boards. Entitlement to insurance benefits is given when care is expected to be necessary for at least six months (hence "long-term" care), while short-term nursing care continues to be funded by the sickness funds and private insurers if included in the benefits basket. Beneficiaries with a care dependency then have a choice of receiving cash-benefits or professional nursing care (or a combination of both) while staying at home or of receiving professional nursing services in nursing homes. The amount of benefits provided depends on the care grade needed.

Between 2015 and 2017 the three Strengthening Long-Term Care Acts (*Pflegestärkungsgesetze I–III*) (see Section 6.1 Analysis of recent reforms) came into force which fundamentally changed the eligibility criteria and assessment procedure in the LTCI system. Prior to the PSG II, "in need of care" legally referred to those individuals who have a physical, psychological or mental disease, and/or a handicap that requires a significant amount of help to carry out daily activities of everyday life. The Medical Review Boards assessed the care needs according to a standardized and complex assessment procedure and categorized the applicant into one of three care levels (1 – 3, and in practice, applicants suffering from dementia were classified as level 0). As a result of PSG II, these three care levels have been transformed into five care grades and the assessment procedure has fundamentally changed. The

most significant change within the care grades is for persons suffering from dementia (the new care grade I replaces the former care level 0 for this group).

Furthermore, several measures expand LTC benefits or improve flexibility to combine individual benefits. PSG I introduced new benefits for family caregivers, e.g. the right to an additional vacation for caregivers (see Section 5.9 Services for informal carers), additional means for renovating homes to adapt them to older people's needs, an expansion of existing cash-benefits, and the requirement for more capacities and medical personnel in nursing homes.

Cash-benefits are intended to cover home care delivered by relatives at the following monthly rates: € 316 in grade II, € 545 in grade III, € 728 in grade IV and € 901 in grade V. Within care grade I impairments are limited, and people are initially only entitled to part of the benefits from LTCI. Cash-benefits, professional home care and inpatient nursing services are not covered in grade I, but people in need of care (irrespective of the care grade) are eligible for a relief amount of up to € 125 per month for caring relatives.

In addition, relatives serving as carers at home can attend training courses free of charge, and short-term replacement care is provided when usual carers take holidays. Carers are also covered by statutory accident insurance and statutory retirement insurance, financed by the sickness fund administering the long-term care insurance of the person in need (see Section 5.9 Services for informal carers). The limits for professional ambulatory services delivered on an in-kind basis are € 689, € 1298, € 1612 and € 1995 respectively. Professional ambulatory care can be supplemented by care in day or night clinics as well as in old age or special nursing care homes. For people choosing fully residential nursing care, monthly benefit limits are € 770, € 1262, € 1775 and € 2005 respectively (Bundesministerium für Gesundheit (BMG), 2019g).

In 2017, the year in which the PSG II became fully operational and expanded eligibility criteria, especially for people with limited everyday capabilities, significantly more people applied for LTC benefits than in the previous year. The number of recipients (mostly for home care) within statutory LTCI increased by more than 20% from 2.7 million in 2016 to 3.3 million in 2017. Altogether, 3.9 million (4.7% of the population) were entitled to benefits from LTCI in 2018, of which 3.7 million were covered by social LTCI and 0.2 million by private LTCI.

TABLE 5.3 Recipients (social and private LTCI) and providers of long-term care, 2018 or latest available year

	HOME CARE (CARE ALLOWANCE AND BENEFITS IN-KIND)		INPATIENT CARE/ (RESIDENTIAL) NURSING HOMES		TOTAL	
	NUMBER	%	NUMBER	%	NUMBER	%
Recipients of LTC services	**3 085 197**	**100**	**834 817**	**100**	**3 920 014**	**100**
Grade I	354 105	12	5 067	1	359 172	10
Grade II	1 459 986	47	187 260	22	1 647 246	42
Grade III	832 592	27	272 772	33	1 105 264	28
Grade IV	319 735	10	241 665	29	561 400	14
Grade V	118 779	4	128 053	15	246 832	6
Providers of long-term care	**14 050**	**-**	**14 480**	**-**	n/a	n/a
Private (for profit)	9 243	66	6 167	43	n/a	n/a
Private (not-for-profit)	4 615	33	7 631	53	n/a	n/a
Public	192	1	682	4	n/a	n/a
Employees	390 322	-	764 648	-	n/a	n/a
Part-time	280 665	72	543 690	71	n/a	n/a
Female	338 580	87	641 011	84	n/a	n/a

Source: Authors' own compilation based on Bundesministerium für Gesundheit (BMG), 2020n; Statistisches Bundesamt, 2018b

Notes: n/a: not applicable. Data on providers refer to the year 2017.

A total of 3.08 million people (80%) received home care and approximately 0.83 million (20%) stayed in nursing homes (see Table 5.3). Of the people cared for at home in 2018, 9% were classified as grade I, 42% grade II, 28% grade III, 14% grade IV and 6% grade V (Table 5.3). Around 50% of recipients received cash benefits only and were cared for by relatives.

5.8.2 *Providers and infrastructure*

There has been an increase in the number of nurses and professional old age caregivers, especially in the ambulatory sector, over the last decade. In

December 2011, 290 700 employees worked in ambulatory institutions accredited to provide services for long-term care at home and 661 200 employees worked in accredited nursing homes. The number of employees in ambulatory long-term care increased by 34% to 390 322 in 2017, and the number of employees in nursing homes increased by 16% to 764 648. The number of part-time working people in ambulatory institutions is higher than in nursing homes. In both sectors most employees are female (Table 5.8) (Statistisches Bundesamt, 2018b).

Similar to other social care sectors, Social Code Book XI applies the principle of subsidiarity to LTC, implying that private (non-profit and for-profit) service providers have priority over public institutions to deliver care. Even so, private for-profit providers are explicitly given the same status, rights and duties as not-for-profit providers in statutory long-term care insurance – one of several measures intended to increase competition among providers.

Of the ambulatory institutions accredited to provide long-term care services in 2017, 66% were owned by private for-profit organizations, 33% by non-profit organizations and 1% by public organizations (see Table 5.3). Private institutions cared for an average of 36 people requiring nursing care and supervision, non-profit institutions for an average of 65 and public institutions for an average of 53 people.

Although the share of privately owned nursing homes has increased at the expense of public providers since the introduction of statutory LTCI in 1995, non-profit welfare organizations dominate inpatient/residential long-term care services. Of the nursing homes accredited for inpatient long-term care (and day hospital care) in December 2017, 53% were in private not-for-profit, 43% in private for-profit and 4% in public ownership (see Table 5.3). The latter were mostly in municipal ownership. The not-for-profit homes managed an average of 67 long-term care patients in each facility, private homes an average of 58, and public homes an average of 80 (Statistisches Bundesamt, 2019f). Between 2001 and 2017 the number of care places in nursing homes increased from 823 to 1151 per 100 000 population, i.e. to 952 367 places (GBE-Bund, 2020g).*

* The difference between the formal number of places and the number given in Table 5.8 is due to the fact that beds are also available for short-term care and partial inpatient care (which are not included in Table 5.8).

5.8.3 *Planning and payment*

The duty to guarantee access to professional ambulatory long-term care has been legally entrusted to long-term care funds that are responsible for administering the statutory LTCI scheme (long-term care funds), while the states secure access to institutionalized care. In the case of long-term care, the principle of "dual financing" means that investment expenditures for institutional long-term care are to be financed by the states, while recurrent costs are financed by long-term care funds or private long-term insurers (see Section 3.7.1 Paying for health services). In contrast to SHI (where ambulatory private providers depreciate their investments via recurrent costs), the states may also finance investments for long-term care in the ambulatory sector (see Section 3.7.1 Paying for health services).

Professional long-term care in the ambulatory sector is paid on a fee-for-service basis while institutionalized care is based on per diem charges. The prices are negotiated at state level between long-term care funds and associations of providers delivering nursing care.

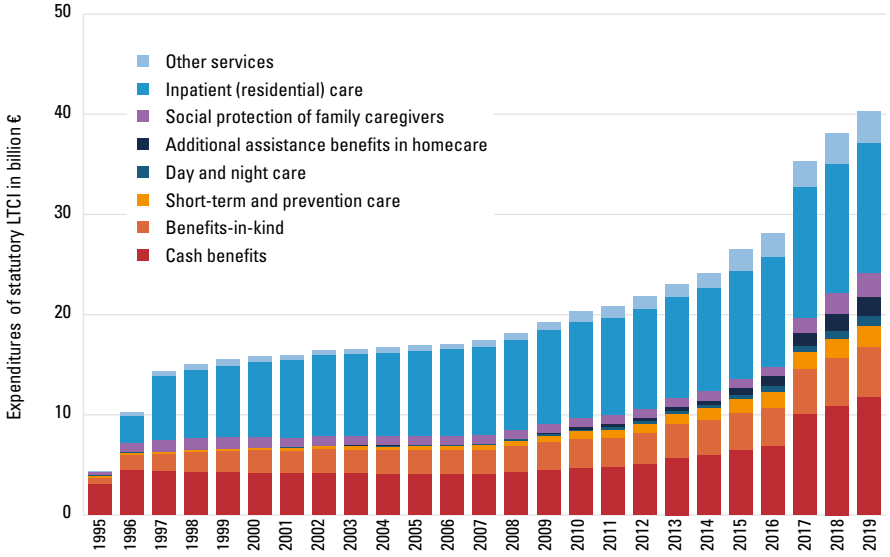
5.8.4 *Expenditures*

Figure 5.5 shows the allocation of resources within the different components of social long-term care insurance between 2000 and 2019. In 2019, 29% of expenditures were spent on cash benefits, and 6% for contributions to the retirement and accident insurance of relatives providing long-term care. Non-cash benefits take up the lion's share of expenditures (65% in total), with 32% going to inpatient care, 12% for ambulatory professional care, 8% for ambulatory or short-term care, 5% for additional assistance in home care, and 8% for other services.

Until 2008 the absolute value of total cash benefits remained constant, and even decreased relatively, whilst the share of non-cash benefits increased. Between 2009 and 2012 expenditures for cash benefits increased slightly due to the introduction of long-term care class "level 0" in 2008, according to which dementia patients were also entitled to benefits, a group which had previously been excluded from these benefits. The further expansion of benefits in PSG I (2015) was coupled with an increase in insurance contribution rates by 0.3 percentage points to 2.35%. Two thirds of this increase (0.2 percentage

points) is used to finance short-term improvements in benefits, while one third (0.1 percentage point) is used to create a long-term care precaution fund in order to stabilize future contribution rates from 2035 onwards. The fund was established at the German Central Bank and is growing annually by € 1.2 billion. The year 2034 is of particular importance, since birth cohorts between 1959 and 1967 (so called "baby boomers") will be 75 years of age, which translates into an increased risk of the need to receive long-term care.

FIGURE 5.5 Expenditures of social long-term care insurance in billion €, 2000–2019



Source: based on Bundesministerium für Gesundheit (BMG), 2020e

The introduction of statutory long-term care insurance led to a substantial reduction in the municipal burden of costs for long-term care. Nevertheless, social welfare benefits continue to be needed to support the elderly in nursing homes, primarily to fund accommodation costs that are not covered by statutory long-term care insurance.

5.9 Services for informal carers

Informal care according to the legal definition (§44 SGB XI) is provided by a person who cares for one or more people in need of long-term care

on a non-working (non-remuneration) basis in their home regularly for at least ten hours a week and at least two days per week (e.g. relatives, neighbours, volunteers). Informal carers are entitled to social security benefits (retirement, accident and unemployment insurance) from the LTC fund (on application).

According to the Federal Statistical Office, 1.76 million people were cared for by a relative in 2017, which corresponds to 68% of all recipients of home care (Statistisches Bundesamt, 2019e). The number of informal carers is estimated at 3 to 5 million people (*Sozialverband Deutschland*). Most informal carers (68%) are female, between 55 and 64 years old (30%) and married (73%). Their care amounts to, on average, 21 hours per week and is most often provided in combination with part-time employment, over an average duration of four years (Knauthe & Deindl, 2019).

5.9.1 *Financial support and respite services*

Monetary support for informal carers is provided, for example, as a care allowance (*Pflegegeld*), which is intended to cover home care delivered by informal carers and is given to the person in need of care by the LTCI fund according to the care grade, who then pays it to their carer (see Section 5.8 Long-term care).

Further support is through (hourly) respite/prevention care (*Verhinderungspflege*) by a substitute carer for up to six weeks and up to € 1612 per year during illness and holidays of informal carers, when the LTC user has at least care grade II (Bundesministerium für Gesundheit (BMG), 2019i). Similarly, short-term or intermediate care (*Kurzzeitpflege*) in an inpatient facility can be used, for example, after hospital stays or during critical situations at home for up to eight weeks and up to € 1612 per year, when the LTC user has at least care grade II (see Section 5.7 Rehabilitation and intermediate care) (Bundesministerium für Gesundheit (BMG), 2017a). Respite care and short-term care can even be combined in some situations. Day or night care for the LTC user in facilities is also available as a respite/support for informal carers (Bundesministerium für Gesundheit (BMG), 2019h). Furthermore, informal carers can obtain support through additional professional home care services and LTC benefits in-kind (*Pflegesachleistungen*), which need to be applied for by the LTC user.

5.9.2 *Care leave from normal employment*

Care leave (*Pflegezeit*) is granted to employees who provide informal care for family members under 18 or end-of-life care for close relatives. Although this full or partial release from work for up to six months is unpaid, social insurance contributions are covered by the LTCI fund upon request. During temporary situations when family members become acutely in need of care, employees are allowed to stay away from work for up to ten days (*kurzzeitige Arbeitsverhinderung*) if this is necessary in order to organize or to provide care. As compensation for their lost income during these ten days, employees can claim a care support allowance (*Pflegeunterstützungsgeld*), which accounts for 90–100% of the lost net income (Bundesministerium für Gesundheit (BMG), 2019j).

5.9.3 *Training and counselling*

Informal carers can attend training courses (§45 SGB XI) and counselling (§7a SGB XI) free of charge (costs are covered by the LTCI fund) (Bundesministerium für Gesundheit (BMG), 2018a). In addition, long-term care users who receive a care allowance (*Pflegegeld*) are required to attend counselling in their homes together with their informal carers every three (care grades II and III) to six (care grades IV and V) months (§37(3) SGB XI). The purpose of this counselling is to ensure the quality of home care and to provide assistance and practical support for informal carers on a regular basis.

5.9.4 *Rehabilitation services*

In cases where informal carers need rehabilitation services themselves, they are eligible to receive such services in inpatient settings, even if ambulatory rehabilitation would be sufficient from a medical point of view. During the rehabilitation measure, the family member in need of care can be cared for in the same facility at the same time (see Section 5.7 Rehabilitation and intermediate care) (Gemeinsamer Bundesausschuss, 2020b, 2020c).

5.9.5 *Strengthening support*

In recent years the Long-term Care Realignment Act of 2013 (*Gesetz zur Neuausrichtung der Pflegeversicherung*), the First Strengthening Long-term Care Act of 2015 (*Pflegestärkungsgesetz I*), and the Second Strengthening of Long-term Care Act of 2017 (*Pflegestärkungsgesetz II*) aimed to support informal carers, for example by introducing or strengthening many of the services and entitlements described above, e.g. respite care, training courses and counselling, and by improving social security coverage for informal carers. Current political discussions and reform plans aim to support informal carers by expanding LTC benefits and improving flexibility to combine individual benefits (Der Bevollmächtigte der Bundesregierung für Pflege, 2020).

5.10 Palliative care

According to a study by the Bertelsmann Foundation (2015), the majority of Germans wish to receive long-term care in their homes for as long as possible and also wish to die at home (76%). Some 10% prefer to die in hospices, 6% in hospitals and an additional 2% in long-term care institutions (Zich & Sydow, 2015). Although a preference for dying at home can be seen in Germany (and in other countries) (Gomes et al., 2013), in 2016 (latest available year) 419 359 deaths occurred in German hospitals, which represents 46% of all deaths. This figure is similar in previous years (Dasch et al., 2015; Statistisches Bundesamt, 2017). According to the above mentioned study (with a baseline year of 2013), 55% of people aged 65 or older died in hospitals, a further 31% died in long-term care facilities and only 3% in hospices. Furthermore, there are wide regional variations in the share of people who died in hospitals (Zich & Sydow, 2015).

Trying to accommodate people's preferences as to where they die is primarily determined by the (regional) availability and adequacy of palliative care provision. Palliative care structures have been expanded considerably over the past decade, even before the Hospice and Palliative Care Act (2015) came into force. Since this legislation, palliative services in ambulatory care (split into general and specialized ambulatory care), inpatient and long-term care is explicitly part of the SHI benefits basket. Furthermore, the legislation granted additional consultation services on palliative and hospice care by the

sickness funds and has strengthened the cooperation between all providers of hospice and palliative care. Training for caregivers, family members and volunteers is organized by a wide range of providers (see www.wegweiser-hospiz-palliativmedizin.de).

There is a structural, regulatory and financial division between palliative care services delivered in inpatient, hospice or ambulatory care settings (please see for more detail Robert Koch-Institut (RKI), 2015b). Palliative care units in hospitals focus on specialized pain treatment, which is delivered by hospital physicians, financed by state investments and via DRGs, and is subject to general hospital regulations (see Section 3.7.1 Paying for health services). In contrast, in situ hospice care focuses on end-of-life nursing care and psychosocial care and is delivered by ambulatory physicians with a specialization in palliative care and nurses, with the support of volunteers. Ambulatory care services – either at the physician's office or by home visits – are provided by ambulatory physicians (GPs or physicians with or without advanced training in palliative care or specialists) and is financed by general ambulatory SHI budgets (see Sections 5.3 Primary care and 3.7 Payment mechanisms). For long-term care institutions the Hospice and Palliative Care Act (2015) states that palliative services should be contracted with GPs or medical specialists who are organized into networks to guarantee availability around the clock (24/7). Since 2016 long-term care facilities have been required to provide more detailed information about their involvement with one of these networks.

Inpatient palliative care structures have expanded considerably: in early 2020 there were 330 palliative care units in hospitals (up from approximately 60 in 2001); and the number of inpatient hospice care facilities stood at 230 (compared to approximatively 100 in 2001) (Deutscher Hospiz-und PalliativVerband e.V., 2020b). In terms of beds, in 2016 (latest available year) the number of hospice beds for adults was 27 per million population (equal to a total of 2507 beds at the time). There were a further 1.8 beds per million population hospice beds for children and adolescents (143 beds in total). These figures mask wide regional variation between states: for example, Bavaria recorded 14 (adult) beds per million population while Berlin and Hamburg had around four times as many, with 55 beds per million population in 2016. Moreover, six states had no children's and adolescents' hospices altogether, while Hamburg recorded 6.6 beds per million population. Nationally, on average, palliative care units provided 31 beds

per million population in 2016 (Deutscher Hospiz-und PalliativVerband e.V., 2016).

Ambulatory hospice services are provided by trained volunteers who provide psychosocial support to patients and their families and perform public outreach and educational activities. Sickness funds are required to provide financial grants to these more professionalized ambulatory hospice services. In 2019 roughly 900 out of a total of 1500 service teams received these grants (up from 97 in 2001, and has remained constant since 2007) (Deutscher Hospiz- und PalliativVerband e.V., 2020b). "General" ambulatory hospice and palliative care (*Allgemeine Ambulante Palliativversorgung – AAPV*) is part of standard care and is thus provided mainly by GPs, specialists and ambulatory nursing care, possibly complemented by other health professionals and outpatient hospice services. However, the structures, funding and quality regulations differ by state and level of service. Introduced in 2007, specialized ambulatory palliative care (*Spezialisierte Ambulante Palliativversorgung – SAPV*), consisting of specifically qualified teams of specialized nurses, physicians specialized in palliative care and psychosocial professions, is available. In addition, the specialized ambulatory palliative care teams work closely with other health professionals and ambulatory hospice services. By early 2019 there were 361 teams (out of which 31 specialized in children and adolescents) taking care of patients with severe incurable diseases and palliating severe symptoms (Deutscher Hospiz- und PalliativVerband e.V., 2020b; Kassenärztliche Bundesvereinigung (KBV), 2020d). Services are provided at home, as well as in nursing homes and hospices. The details of the requirements for referring patients to specialized palliative care are defined by the Federal Joint Committee in a specific directive on palliative care (Gemeinsamer Bundesausschuss, 01.06.2020). The services and skills offered by the teams include a broad range of interventions, from case management, coordination of care, comprehensive pain and symptoms management, and psychosocial support, and are available within comprehensive 24/7 services (Berger et al., 2020). However, specialized ambulatory palliative care teams are not yet (equally) available in every region of the country, and financing and regulation vary across states (GKV-Spitzenverband, 2018; Melching, 2015). A national framework agreement between the Federal Association of Sickness Funds and provider organizations to address this regional variation is legally required by §132d SGB V. Work on this began in 2019 and is (at the time of writing) under discussion (Deutscher Hospiz-und PalliativVerband e.V., 2020a).

5.11 Mental health care

Mental health care is growing in importance and in 2015 (latest available year) 13% of total health expenditure was spent on mental health care,* which is the third highest spend per disease entity in Germany (Statistisches Bundesamt, 2017). Beyond directly related health expenditure, mental health is also a main driver for indirect health expenditures such as (long-term) leave due to incapacity to work (23.1% in 2014). Depressive episodes, in women and men alike, were the most often reported cause of incapacity to work and caused roughly a fourth of related costs in 2014 (Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen, 2015). More recent analysis has reaffirmed an increase in mental health-related utilization of health services and costs (BARMER Institut für Gesundheitssystemforschung, 2020).

Provision of mental health care is fragmented among ambulatory, inpatient and rehabilitative care. These services are complemented by an integrative service for disabled persons, preventive services and patient groups. After a process of deinstitutionalization that started in the mid-1970s, since the year 2000 there has been an increase in capacity through specialized hospitals and in general hospitals with specialized mental health wards. Simultaneously, the average length of stay has been reduced to 26.2 days in 2018. Characteristically, all inpatient psychiatric care units have very high occupancy rates of around or above 90% (Table 5.4). In 2018 there were 279 specialized hospitals solely dedicated to psychiatric care, with a total of 46 610 beds. In addition, there were 805 psychiatric wards in acute care hospitals with a total of 75 196 beds; of these, 144 wards specialized in child and adolescent psychiatry (6554 beds).

In 2018 a total of 891 711 patients were treated in inpatient psychiatric care (specialized hospitals and psychiatric wards combined; equal to 1069 diagnoses per 100 000 population). The treatment of depressive episodes was responsible for a fifth of all psychiatric hospital stays in 2018. Since 2018 psychiatric hospitals have been reimbursed based on clinically defined groups with comparable costs (*Pauschalierendes Entgeltsystem Psychiatrie und Psychosomatik –– PEPP*), which also allows for a more detailed analysis of inpatient psychiatric care (GBE-Bund, 2020b).

---

* Measured by ICD-10 entity F00-F99.

TABLE 5.4 Inpatient mental health care provision in Germany, 2000–2018

	2000	2005	2010	2018	%-CHANGE (2000–2018)
Hospitals with exclusively psychiatric, psychotherapeutic and/or neurological and/or geriatric beds					
Number of specialized hospitals[a]	194	234	245	279	+43.4%
Number of psychiatric beds[a]	36 537	38 869	40 292	46 610	+27.6%
FTE medical personnel[b,c,d]	n/a	5 119	5 587	7 419	+44.9%*
Average length of stay (days)[a]	29.5	25.6	25	26.2	-11.1%
Occupancy rate (%)[a]	88.5	89	92	92	+3.9%
General hospitals with specialized psychiatric wards and beds[b,c,d]					
Child and adolescent psychiatry					
Wards	114	129	137	144	+26.3%
Beds	n/a	4 921	5 460	6 554	n/a
Adult psychiatry and psychotherapy					
Wards	394	404	412	393	-0.3%
Beds	n/a	52 856	54 035	56 617	n/a
Psychosomatic care					
Wards	n/a	137	179	268	+95.6%*
Beds	n/a	5 199	7 300	12 025	n/a*
Average length of stay (days) for each type	47/28/n.a.	43/24/40	39/23/40	36/24/43	-23.4%/-4.3%/n.a.
Occupancy rate (%)	88/89/n.a	91/91/91	92/93/93	89/95/90	+4.5%/+6%/n.a.

Sources: GBE-Bund, 2020b[a]; Statistisches Bundesamt, 2006[b], 2012[c], 2020g[d]

Notes: *refers to the percentage change between 2005 and 2018. FTE: Full-time equivalent; n/a: not available

Like general inpatient care, the states are responsible for planning of inpatient psychiatric care. They detail the number and setting of beds in hospitals (and also decide on designated specialized psychiatric hospitals or whether to shift provision to general acute hospitals) (AG Psychiatrie der AOLG, 2007, 2017). Psychiatric outpatient departments (*Psychiatrische Institutsambulanzen – PIA*) are another means of providing mental health care. These services are based at psychiatric hospitals which have been authorized by the Accreditation Committee to provide outpatient psychiatric and psychotherapeutic care for insured individuals.

The process of deinstitutionalization was accompanied by an increase in the number of community-based institutions, especially supervised residential arrangements, ambulatory crisis intervention centres and centres for psychosocial counselling and social support. These are frequently run on a not-for-profit basis. At the same time, there was an increase in the number of hospitals (and beds) dedicated to prevention and rehabilitative care that lie outside the state hospital requirement plans. Often owned by private for-profit providers, these institutions specialize particularly in caring for patients with addiction problems and psychosomatic conditions. Ambulatory care for the mentally ill (adults and children) is supported by the increasing number of office-based psychiatrists, neurologists and psychotherapists working in the ambulatory care sector (see Section 5.3 Primary care). In 2018 there were approximately 46 000 psychotherapists (including child and youth psychotherapists), most of them employed in the ambulatory care sector (34 000 or 73.9%) (Statistisches Bundesamt, 2020e). The number of these medical professions has increased over the last few years, with psychotherapists recording a five-year increase of 32% since 2014 (Kassenärztliche Bundesvereinigung (KBV), 2014, 2019d).

Planning of providers and services covered under SHI is the responsibility of the Federal Joint Committee and the Regional Associations of SHI Physicians respectively. Since 2000 ambulatory psychiatrists have been made coordinators of a set of benefits called "sociotherapeutic care" to encourage people with chronic mental health conditions to utilize necessary care and to avoid unnecessary hospitalizations. In 2017 a directive of the Federal Joint Committee further regulated psychotherapeutic counselling, which is conceptualized as the first contact point for ambulatory psychotherapeutic services. Psychotherapists have to reserve at least 100 minutes a week for these psychotherapeutic counselling sessions (in person for at least 25 minutes, also possible as group sessions). If there is an acute need for treatment, an acute psychotherapeutic treatment can follow to help the patient cope with their personal crisis and avoid hospitalization (the line of treatment is capped at 24 interventions of 25 minutes). In addition, and if there is free capacity in terms of therapy places, long-term psychotherapeutic treatment can follow these options. The 2017 directive also introduced a form of prevention for recurring episodes through follow-up sessions after a psychotherapeutic treatment (Gemeinsamer Bundesausschuss, 22.09.2019).

In the past, the availability of ambulatory psychotherapeutic care was perceived as a key problem with long (and regionally diverse) waiting times for a therapy place. This was targeted in 2015 by the Healthcare Strengthening Act by installing central service points for booking appointments at each of the Regional Associations of SHI Physicians. In 2018 a representative study among those insured by one of the largest sickness funds indicated that 90% of those insured wishing to book an appointment directly approached private practices, and 8% used a central service point. Some 80% reported being able to book an appointment within 4 weeks with a psychotherapist (BARMER Institut für Gesundheitssystemforschung, 2020). Another study indicated an average waiting time of 5.7 weeks for a counselling session in 2017. However, there are regional differences: in urban regions such as Berlin waiting times of 3.4 weeks were recorded, compared to a maximum of 11 weeks in rural areas (Bundespsychotherapeutenkammer (BPtK), 2018). Both studies report that roughly 10% of contacts had no need for a psychotherapeutic treatment and 20% were directed to other forms of counselling, such as patient groups. However, there are still waiting times for (long-term) therapy places of around five months.

The quantity, comprehensiveness and quality of ambulatory psychotherapeutic services vary largely between different local communities and states. Despite advances, psychosocial facilities are often less well equipped than institutions for somatic care, and access to occupational rehabilitation and comprehensive social integration is still considered insufficiently developed. Additionally, public health offices provide social-psychiatric services, including counselling, social work, home visits and crisis intervention, directed particularly at the most disadvantaged among the mentally ill.

5.12 Dental care

The basic entitlement to dental care of those insured under SHI are addressed implicitly in §28 SGB V as measures for the prevention, early detection and treatment of diseases of the teeth, mouth and jaw. Therefore, prophylactic treatments and basic dental care are covered by the sickness funds. Conservative surgical treatment and X-ray services are also included in the benefits basket if used in the case of dentures and superstructures. Furthermore, SHI covers services of single and group prophylaxis of children

up to 16 years of age in pre-schools and schools; prevention of dental diseases in care-dependent patients and patients with disabilities (§§21 and 22 SGB V); and early detection examinations for children up to the age of 6 (§26 SGB V) (Gemeinsamer Bundesausschuss, 17.01.2019).

The Federal Joint Committee is responsible for regulating the details of dental care through directives. These directives aim to ensure sufficient, appropriate and cost-effective provision of dental care and to assure quality in dental treatment jointly with the Regional Associations of SHI Dentists (since July 2019 in charge of monitoring quality of provided health services through random samples) (Gemeinsamer Bundesausschuss, 22.11.2019). While the directives broadly define when a patient is entitled to a benefit, they do not define the benefits basket explicitly. This is done indirectly by the Valuation Committee, which defines the Uniform Value Scale for dentists, which lists services that are reimbursed by the sickness funds. The services of dental technicians are listed in a similar framework, the Uniform Value Scale for Dental Technicians (BEL II).

Dental care is subject to explicit cost-sharing in SHI (for more details see Section 3.4.1 Cost sharing (user charges)) and as SHI does not fully cover dental benefits, supplementary insurance plays an important role (see Section 3.5.2 Supplementary and complementary private health insurance).

In 2018 dental care was primarily delivered by 41 097, mostly privately owned, dental practices, of which 33 899 were solo practices and 7198 were team-based/group practices (87.7% owned by two dentists, 12.3% owned by more than two dentists) (Statistisches Bundesamt, 2020j). In 2018 there were 72 592 practising dentists, of whom 19 393 dentists (corresponding to 26%) worked as employed dentists (see Section 4.2.2 Trends in the health workforce). There has been an overall increase in the number of employed dentists over the last two decades. Since 2001 the number of employed dentists has increased twofold, while the number of independently practising dentists decreased by 7.1% between 2000 and 2018 (Statistisches Bundesamt, 2020b). From 2019 SHI-affiliated dentists are allowed to employ up to three dentists (up to four dentists with justification) (Kassenzahnärztliche Bundesvereinigung (KZBV) und GKV-Spitzenverband, 2020).

6

Principal health reforms

- Since 2012 the German health care system has been mainly characterized by stability and adherence to the basic structures and principles of the statutory health insurance. Historically, SHI has been a focus of reform activities.
- While the frequency of legislative changes is extraordinarily high – in 2019 one law was passed every month – in most cases this activity is focused on incremental changes and implementation measures within individual sectors rather than landmark reforms, which were seen in previous times.
- Key areas of reforms have been in assuring equal access in ambulatory care, quality assurance in inpatient care, and strengthening coordination of care. Other reform areas have been in changing the curricula, training and qualification requirements of health personnel and in overhauling long-term care.
- Another important area has been to accelerate long-standing measures for the digitalization of health services, with a major push in 2019 and 2020 (although full implementation is still pending).
- The German presidency of the Council of the EU in the second half of 2020 – with the motto '*Together for Europe's recovery*' – featured health politics more prominently and was recalibrated to account for the COVID-19 pandemic and its social, economic and political consequences.

6.1 Analysis of recent reforms

The German health care system has seen many legal interventions in recent years. The following section gives an account of the political objectives and contents of health care reform legislation between 2012 and the first half of 2020. Reforms between 1989 and 2012 are described in detail in previous editions of this Health System Review (Busse, 2000; Busse & Blümel, 2014; Busse & Riesberg, 2004). A brief overview of health reforms during the period 2004–2012 is also provided in Box 6.1.

The political leadership of the period 2012–2020 is marked by stability under the chancellorship of Angela Merkel. Successive governments

BOX 6.1 A short narrative on reforms between 2004 and 2012

Continuing the goals of the previous decade, cost-containment and securing a sustainable financing system were the major objectives in health care policy during the 2000s. Major milestones towards achieving these goals were the SHI Modernization Act (2004) and the Pharmaceutical Market Reform Act (2011). Measures such as the redesign of the co-payment system aimed to generate more resources for SHI, whereas other measures changed pricing policy for new pharmaceuticals fundamentally. In addition, reforms partly delegated more competences to the system of self-governance in SHI, e.g. by creating the Federal Joint Committee in 2004.

Major political intervention in health care occurred primarily when the SHI incurred financial deficits. Alongside government goals of consolidating SHI financing and limiting expenditure, a parallel focus of reforms in the period 2004–2012 was the promotion of competition among sickness funds and improving the quality of health care. A major reform in this area was the Strengthening Competition in SHI Act (2007), which introduced the central reallocation pool (*Gesundheitsfonds*) and a risk-adjustment scheme to redistribute revenues as well as a standardization of the contribution rate so that the central reallocation pool could cover at least 95% of all SHI expenditure. Furthermore, insurance coverage with either SHI or substitutive PHI became mandatory for the population. Sickness funds could offer a range of tariff options to those insured, and additional changes along these lines were subsequently introduced by the SHI Financing Act (2010).

Source: Busse & Blümel, 2014

maintained the basic SHI structures and the corporatist mode of regulating the health care sector. Nevertheless, the Christian Democrat/Liberal Democrat Coalition Government (2009–2013) pursued the goal of consolidating SHI financing while at the same time limiting expenditure, particularly for pharmaceuticals. In hospital care especially, the focus was on quality assurance and patient safety. The comprehensive reforms to the long-term care insurance system also started under this government and were continued by the two consecutive grand coalitions of Christian Democrats and Social Democrats from 2013. These governments pursued the goal of equal access to ambulatory care (i.e. promoting greater access to care in underserved areas, reducing waiting times), and also strengthening coordination across sectors. Another area of reforms focused on the training requirements, curricula and skill-set of health professionals in order to ensure a sustainable workforce in the future (Deutscher Bundestag, 2009, 2013, 2018b).

Table 6.1 outlines many of the health care reforms and legislative changes that have taken place between 2012 and the first half of 2020. Notably, this period has seen an unusually high number of changes, i.e. on average six laws a year between 2012 and 2017, with a slowdown in 2018 only due to the fact it took six months to form a government coalition following federal elections in September 2017. Between 2019 and the first half of 2020, on average, one health-related law was passed every month. Many changes between 2012 and 2020 were to put into effect or complete previously discussed reforms (e.g. reforms to long-term care and the Act to Strengthen Health Promotion and Disease Prevention). Other reforms aimed at closing gaps in the benefits basket (e.g. the Hospice and Palliative Care Act) or were corrections to previous legislation. Additionally, some reforms have been a direct reaction to misconduct (e.g. the changes to the organ transplant register). It is noteworthy, however, that this period also focused on new areas (e.g. digitalization of health care) and some reforms gave a more direct regulative role to the federal level of government.

The rest of this section provides a broad overview of this legislative activity and reforms under the following categories: (i) SHI and provision of health services, (ii) financing and reimbursement, (iii) health professionals, and (iv) long-term care.

TABLE 6.1 Chronology of main reforms to the German healthcare system, 2012–June 2020

YEAR	NAME OF REFORM (ORIGINAL NAME IN GERMAN)	YEAR OF ENFORCEMENT
2011	SHI Care Structures Act (*Gesetz zur Verbesserung der Versorgungsstrukturen in der GKV*)	2012
2012	Raise Awareness on Transplantation Donation Act *(Gesetz zur Regelung der Entscheidungslösung im Transplantationsgesetz*)	2012
	Amendment to the Law on Transplantation (*Gesetz zur Änderung des Transplantationsgesetzes*)	2012
	Second Amendment to the Regulation on Pharmaceuticals Act *(Zweites Gesetz zur Änderung arzneimittelrechtlicher und anderer Vorschriften*)	2012
	Long-term Care Realignment Act (*Gesetz zur Neuausrichtung der Pflegeversicherung*)	2012
	Psychiatry Remuneration Act (*Gesetz zur Einführung eines pauschalierenden Entgeltsystems für psychiatrische und psychosomatische Einrichtungen*)	2012–2013
	Abolishment of Co-payment per Physician Visit Act (*Gesetz zur Regelung des Assistenzpflegebedarfs in stationären Vorsorge- und Rehabilitationseinrichtungen / Abschaffung der Praxisgebühr*)	2012–2013
2013	Patients' Rights Act (*Gesetz zur Verbesserung der Rechte von Patientinnen und Patienten*)	2013
	Further Development of Early Detection of Cancer and Establishing a Comprehensive Cancer Registry Act (*Gesetz zur Weiterentwicklung der Krebsfrüherkennung und zur Qualitätssicherung durch klinische Krebsregister*)	2013–2016
	Emergency Paramedics Act (*Gesetz über den Beruf der Notfallsanitäterin und des Notfallsanitäters*)	2014
	Securing Out-of-Hours Service of Pharmacies Act (*Gesetz zur Förderung der Sicherstellung des Notdienstes von Apotheken*)	2013
	Third Amendment to the Regulation on Pharmaceuticals Act (*Drittes Gesetz zur Änderung arzneimittelrechtlicher und anderer Vorschriften*)	2011–2014
	16th Amendment to the Pharmaceuticals Act (*Sechszehntes Gesetz zur Änderung des Arzneimittelgesetzes*)	2014
	Act to Eliminate Social Burden of Debts for Health insurance (*Gesetz zur Beseitigung sozialer Überforderung bei Beitragsschulden in der Krankenversicherung*)	2013
	13th Amendment to Social Code Book V (*Dreizehntes Gesetz zur Änderung des Fünften Buches Sozialgesetzbuch*)	2014
2014	14th Amendment to Social Code Book V (*Vierzehntes Gesetz zur Änderung des Fünften Buches Sozialgesetzbuch*)	2014
	Budget Act 2014 (*Gesetz über die Feststellung des Bundeshaushaltsplans für das Haushaltsjahr 2014*)	2014
	Further Development of Financial Structures and Quality in Statutory Health Insurance Act (*Gesetz zur Weiterentwicklung der Finanzstruktur und der Qualität in der GKV*)	2015
	First Strengthening Long-term Care Act (*Pflegestärkungsgesetz I*)	2014–2015
2015	Healthcare Strengthening Act (*Gesetz zur Stärkung der Versorgung in der GKV*)	2015–2017
	Act to Strengthen Health Promotion and Disease Prevention (*Gesetz zur Stärkung der Gesundheitsförderung und der Prävention*)	2015–2016
	Hospice and Palliative Care Act (*Gesetz zur Verbesserung der Hospiz- und Palliativversorgung*)	2015–2016
	Reform of Hospital Structures Act (*Gesetz zur Reform der Struktur der Krankenhausversorgung*)	2016
	E-health Act (*Gesetz für sichere digitale Kommunikation und Anwendungen im Gesundheitswesen*)	2016–2017
	Second Strengthening Long-Term Care Act (*Pflegestärkungsgesetz II*)	2016–2017
2016	Mitigating Corruption in the Health System Act (*Gesetz zur Bekämpfung von Korruption im Gesundheitswesen*)	2016
	Transplant Registry Act (*Gesetz zur Errichtung eines Transplantationsregisters und zur Änderung weiterer Gesetze*)	2016–2017
	Developing Provision and Reimbursement of Psychiatric Care Act (*Gesetz zur Weiterentwicklung der Versorgung und der Vergütung für psychiatrische und psychosomatische Leistungen*)	2017
	Fourth Amendment to the Regulation on Pharmaceuticals Act (*Viertes Gesetz zur Änderung arzneimittelrechtlicher und anderer Vorschriften*)	2016
	Third Strengthening Long-Term Care Act (*Pflegestärkungsgesetz III*)	2016–2020

YEAR	NAME OF REFORM (ORIGINAL NAME IN GERMAN)	YEAR OF ENFORCEMENT
2017	Strengthening Self-Government Act (*Gesetz zur Verbesserung der Handlungsfähigkeit der Selbstverwaltung der Spitzenorganisationen in der gesetzlichen Krankenversicherung sowie zur Stärkung der über sie geführten Aufsicht*)	2017
	Legalizing Medical Hemp for Medical Purposes Act (*Gesetz zur Änderung betäubungsmittelrechtlicher und anderer Vorschriften*)	2017
	Strengthening the Provision of Medical Aids and Pharmaceuticals Act (*Gesetz zur Stärkung der Heil- und Hilfsmittelversorgung*)	2017–2018
	Strengthening Provision of Pharmaceuticals Act (*GKV-Arzneimittelversorgungsstärkungsgesetz*)	2018
	Nursing Care Professions Act (*Gesetz zur Reform der Pflegeberufe*)	2017–2025
	Modernization of Epidemiological Surveillance of Communicable Diseases Act (*Gesetz zur Modernisierung der epidemiologischen Überwachung übertragbarer Krankheiten*)	2017
2018	SHI Contribution Relief Act (*Gesetz zur Beitragsentlastung der Versicherten in der gesetzlichen Krankenversicherung*)	2018–2020
	Nursing Staff Empowerment Act (*Pflegepersonal- Stärkungsgesetz*)	2019–2020
2019	Second Amendment to the Law on Transplantation (*Zweites Gesetzes zur Änderung des Transplantationsgesetzes – Verbesserung der Zusammenarbeit und der Strukturen bei der Organspende*)	2019
	Improved Information Prior to an Abortion Act (*Gesetz zur Verbesserung der Information über einen Schwangerschaftsabbruch*)	2019
	Strengthening Appointment Service Points and Care Delivery Act (*Terminservice- und Versorgungsgesetz*)	2019–2021
	Act for more Safety in the Supply of Pharmaceuticals (*Gesetz für mehr Sicherheit in der Arzneimittelversorgung*)	2019–2022
	Psychotherapist Education Act (*Gesetz zur Reform der Psychotherapeutenausbildung*)	2019–2020
	Midwifery Reform Act (*Hebammenreformgesetz*)	2019–2020
	Increased Salaries for Nursing Professionals Act (*Gesetz für bessere Löhne in der Pflege*)	2019
	Digital Provision Act (*Gesetz für eine bessere Versorgung durch Digitalisierung und Innovation*)	2019–2022
	Anaesthesia and Surgery Medical Assistant Education Reform Act (*Gesetzes über die Ausbildung zur Anästhesietechnischen Assistenten/in und über die Ausbildung zur Operationstechnischen Assistenten/in*)	2020–2022
	Medical Review Boards Reform Act (*Gesetz für bessere und unabhängigere Prüfungen*)	2020–2022
	Introduction of an Allowance in Statutory Health Insurance to Promote Company Pension Schemes Act (*Gesetz zur Einführung eines Freibetrages in der gesetzlichen Krankenversicherung zur Förderung der betrieblichen Altersvorsorge*)	2020
2020[a]	Pharmaceutical Technical Assistant Education Reform Act (*Gesetz zur Weiterentwicklung des Berufsbildes und der Ausbildung der pharmazeutisch-technischen Assistentinnen und pharmazeutisch-technischen Assistenten*)	2023
	Measles Protection Act (*Gesetz für den Schutz vor Masern und zur Stärkung der Impfprävention*)	2020–2021
	Deciding on Organ Donation Act (*Gesetz zur Stärkung der Entscheidungsbereitschaft bei der Organspende*)	2022
	Fair Competition among Sickness Funds Act (*Gesetz für einen fairen Kassenwettbewerb in der gesetzlichen Krankenversicherung*)	2020
	Medical Devices Adaption Act – EU (*Medizinprodukte-EU-Anpassungsgesetz*)	2020–2022
	Ban on Sexual Conversion Therapy Act (*Gesetz zum Schutz vor Konversionsbehandlungen*)	2020
	Intensive Care and Rehabilitation Strengthening Act (*Intensivpflege- und Rehabilitationsstärkungsgesetz*)	2020
	Patient Data Protection Act (*Patientendaten-Schutz-Gesetz*)	2020
	Strengthening Local Pharmacies Act (*Apothekenstärkungsgesetz*)[b]	n/a

Notes: The list consists of laws that have had to be passed by parliament (*Gesetze*), and does not include other regulations or legislation passed by the Federal Ministry of Health or other bodies of the executive branch (*Verordnungen*); n/a: not applicable; [a] COVID-19 related legislation is not included; [b] this is still draft legislation to be presented to parliament for further consultation

6.1.1 *Changes to statutory health insurance and services*

Reforms since 2012 have focused mostly on the organization and governance of the SHI system. A main focus was ensuring equal access to ambulatory care providers and quality assurance, mostly for inpatient care. There was also a gradual – but constant – broadening of SHI coverage by either adding new services to the benefits basket (e.g. palliative care), or reducing cost-sharing (e.g. increasing the "fixed subsidy" for dentures and crowns from 50% to 60% of standard care by October 2020).

ASSURING EQUAL ACCESS TO CARE NATIONWIDE

Making sure that patients have equal access to care (and avoiding under- and overserved areas) has been central to reform activities over the last decade. The government passed the SHI Care Structures Act (*Gesetz zur Verbesserung der Versorgungsstrukturen in der GKV*) in 2011 mainly to strengthen the provision of ambulatory care. Some of the main measures were: (i) the introduction of needs-based planning – the Federal Joint Committee had to establish new physician-patient ratios taking regional demographic factors and morbidity into consideration; (ii) providing financial incentives for physicians working in underserved areas through the introduction of a (voluntary) ring-fenced "structure fund"* and additional changes to the reimbursement scheme; and (iii) containing oversupply by refusing licences for new ambulatory care physicians (for more detail see Busse & Blümel (2014)). A further change in the ambulatory sector was the introduction of highly specialized medical care in this setting, i.e. treatment of diseases with severe progressive forms (e.g. HIV/AIDS, multiple sclerosis, cancers) or rare diseases (e.g. tuberculosis, cystic fibrosis, Wilson disease), as well as highly specialized procedures (e.g. computed tomography/MRI-aided interventional pain therapy). These new services can now be provided by medical specialists, by medical treatment centres or by hospitals.

---

* A certain share of contributions ("*Sicherstellungszuschlag*") (0.1 percent of the total morbidity-related remuneration) can be paid to physicians in an area with a determined undersupply. Therefore, the Regional Associations of SHI Physicians set up structure funds ("*Strukturfonds*") which are used to finance e.g. home visits and providing care in underserved areas, either as FFS or a fixed sum.

An additional line of ring-fenced financing was also implemented to secure out-of-hours services by pharmacies (8pm–6am) in 2013. In particular, the Securing Out-of-Hours Service of Pharmacies Act (*Gesetz zu Förderung der Sicherstellung des Notdiensten von Apotheken*) aimed to strengthen pharmacies in underserved areas as these provide out-of-hours services more often. In 2020 the reimbursement of each out-of-hours service is topped up to the amount of € 350 for each shift providing out-of-hours service from the structure fund, which in turn is financed through pharmacy fees paid on each prescribed pharmaceutical (Bundesministerium für Gesundheit (BMG), 21.09.2019).

In addition, the Healthcare Strengthening Act (*Gesetz zur Stärkung der Versorgung in der GKV*) was passed in 2015. This legislation consisted of many measures that aimed to further regulate the provision of ambulatory services to improve access to high-quality care and to strengthen coordination across sectors, including:

- ***Promoting equal access to care***: municipalities were enabled to operate medical treatment centres in their own right and further financial incentives were made available for physicians in underserved areas; the main mechanism was to make the previously mentioned voluntary structure fund obligatory and financed via the Regional Association of SHI Physicians;
- ***Installing Appointment Service Points***: since 2016 each Regional Association of SHI Physicians has had to provide an "Appointment Service Point". These are hotlines that patients needing an appointment can call and that centrally allocate appointments with (specialist) ambulatory care providers within four weeks and within a "reasonable" geographical distance. Only appointments with a valid referral are coordinated through these service points. This measure was strengthened further in 2019 (see below);
- ***Innovation in service provision***: an additional strand of financing (initially worth € 300 million and then extended to a total of € 500 million) has been issued by the Federal Joint Committee over the period 2016–2024 for innovations in service provision. Of the total sum available per year, a vast majority is dedicated to projects that explore and evaluate new models of service provision, whereas € 115 million has been dedicated to health services research; and

- ***Coordination of care***: hospitals are now equipped with more competencies and duties after discharging a patient. For instance, hospitals can issue sick leave certificates for seven days.

In 2016 the Reform of Hospital Structures Act *(Krankenhausstrukturgesetz)* also ruled on the establishment of ambulatory care practices in or near hospitals. Each Regional Association of SHI Physicians is now responsible for securing treatment for patients with non-urgent symptoms out-of-hours (see also Section 5.5 Urgent and emergency care).

In 2019 the Appointment Service Points were again the focus of legislative attention and their services and scope were broadened. The Strengthening Appointment Service Points and Care Delivery Act (*Terminservice- und Versorgungsgesetz*) consisted of many measures that are only loosely connected and the Act made amendments to a total of 15 existing laws. Although the accessibility of ambulatory care was its main concern, it also aimed to improve coordination between providers and added new health services to the benefits basket (e.g. pre-exposure prophylaxis for patients with increased risk of HIV exposure). Some of the main provisions are:

- ***Expanding the services of the Appointment Service Points***: Since 2020 these service points are available 24/7 using the nationwide telephone number 116117 and a website. Service points are required to secure an appointment with a GP, paediatrician or specialist within four weeks, and an acute appointment with a psychotherapist within two weeks. Furthermore, the appointment service points will be required to direct patients in need of acute care to an appropriate provider, which can be a nearby medical practice or hospital;
- ***Improving accessibility***: To increase service availability even more, SHI physicians will be expected to notify the Appointment Service Points about free time slots for appointments and to extend opening hours for SHI patients from at least 20 to 25 hours per week. The practice must also be open to patients in acute need of care without an appointment for at least five hours a week; and
- ***Provision of care in underserved areas***: Physicians will receive additional compensation on top of their income if they establish in underserved areas. This is additional to the already existing tools and budgets to attract physicians to underserved areas (e.g. to

operate medical treatment centres or to subsidize costs to refurbish medical practices). Furthermore, rheumatologists, psychiatrists and paediatricians will be exempt from the needs-based planning tool of the Regional Associations of SHI Physicians and thus are free to establish in any area of interest.

QUALITY ASSURANCE AND PATIENT SAFETY (ESPECIALLY IN INPATIENT CARE)

Assuring the quality of care has remained a particular focus of reform activities since 2012. A milestone to quality assurance was the foundation of the Institute for Quality Assurance and Transparency in Healthcare (*Institut für Qualitätssicherung und Transparenz im Gesundheitswesen – IQTIG*) via the Further Development of Financial Structures and Quality in Statutory Health Insurance Act (*Gesetz zur Weiterentwicklung der Finanzstruktur und der Qualität in der GKV*, 2014). The IQTIG is charged with harmonizing the existing separate programmes for quality assurance in ambulatory and inpatient care.

The IQTIG was further tasked with developing indicators for (i) quality-based hospital planning; (ii) four areas for quality improvement through selective contracting between sickness funds and hospitals; and (iii) pay-for-performance in hospital care in 2016. This was legislated through the Reform of Hospital Structures Act that primarily focused on the financing of hospital services. To counteract the decreasing investments in hospitals by states, a federal grant scheme was established (see Section 4.1.1 Infrastructure, capital stock and investments) to maintain the quality of hospital infrastructure.*

6.1.2 *Reforms to financing and reimbursement*

There have been few substantial changes to the overall financing architecture of the German health care system since 2012, with legislation being either corrections or incremental amendments to previous legislation. This is partly due to the existence of considerable SHI financial reserves. By the end of March 2019 the sickness funds had accumulated financial reserves of

* Another focus of the *Reform to Hospital Structures Act*, though, was financing additional nursing personnel in hospitals and ensuring the sustainable financing of personnel costs for nursing staff in inpatient care.

more than € 21 billion, equivalent to more than one month of SHI expenditure – and more than four times the legally required minimum reserve (Bundesministerium für Gesundheit (BMG), 20.06.2019).

ENFORCING THE LEGAL MANDATE FOR OBLIGATORY HEALTH INSURANCE

Having obligatory health insurance, either in SHI or substitutive PHI, has been legislated since 2009. However, Germany's complex coverage mechanisms mean that certain population groups are at risk of not having health insurance due to financial or administrative hurdles (see Box 3.1). Reducing these hurdles has been the target of two related pieces of legislation:

- Act to Eliminate Social Burden of Health Insurance (*Gesetz zur Beseitigung sozialer Überforderung bei Beitragsschulden in der Krankenversicherung*): In 2013 this legislation aimed to reduce the financial hardship of previously uninsured persons. The penalty rate of interest for unpaid contributions in SHI was reduced to 1% (down from 5%). A one-time amnesty (debt relief) from August to December 2013 on all outstanding SHI contributions was also granted. According to the Federal Ministry of Health, 28 000 people (re-)gained coverage in SHI and 4500 persons in substitutive PHI, compared to the estimated 50 000 people with extraordinarily high levels of unpaid contributions with one of the two insurance schemes (Deutscher Bundestag, 2014); and
- The SHI Contribution Relief Act (*Gesetz zur Beitragsentlastung der Versicherten in der gesetzlichen Krankenversicherung*): In 2018 the legislation halved the calculation base for determining the minimum SHI contribution for self-employed people (from € 2284 to € 1038 per month). This measure was by far the most prominent out of a multitude of changes that aimed at closing coverage gaps for vulnerable groups and/or relieving the burden of making SHI contributions for the insured population. Additionally, this legislation mandated that the supplementary contribution to the sickness funds would be shared equally between the employer and employee from January 2019 onwards (see Section 3.2 Sources of revenue and financial flows).

REFORMS TO REIMBURSEMENT IN INPATIENT CARE

The reimbursement of psychiatric and psychosomatic services was reformed substantially by legislation in 2012 (Psychiatry Remuneration Act, which came into force in 2013). Yet it reflects a long legislative process that dates back to 2009, when self-governing bodies agreed on a new classification system in psychiatric and psychosomatic care (GKV-Spitzenverband et al., 2009). In 2014 some substantial changes were made to the original agreement, partly as a reaction to strong criticism from patient organizations and clinical experts of the wide variation in treatment durations (average length of stay) in mental health care (Deutsche Krankenhausgesellschaft et al., 2019).*

The Further Development of Financial Structures and Quality in Statutory Health Insurance Act (2014) prolonged the transitional period to implement the new reimbursement scheme between 2015 and 2017. The Developing Provision and Reimbursement of Psychiatric Care Act (2016) prolonged the period for another year and since 2019 all hospitals have to be reimbursed through the new psychiatric and psychosomatic reimbursement system. The 2016 legislation also included the mandate to explicitly cover for personnel costs and (un-)filled positions in psychiatric and psychosomatic care through sickness fund remuneration. Additionally, the legislation ruled on a hospital-specific budget that is determined by volume, number and regional-specific needs for psychiatric care and aims at strengthening coordination across sectors.

Along similar lines, in 2019 the G-DRG system experienced its first major change since its introduction in 2003 when the Nursing Staff Empowerment Act (enforced since 2020 (see Section 3.7 Payment mechanisms)) altered the G-DRG system. The legislation ruled that actual costs of nursing staff in acute care hospitals need to be fully covered by the sickness funds, while all other operating costs are covered by DRGs calculated based on average costs.

* The critique focused on the fact that some psychiatric clinics had longer ALOS for the same diagnosis because e.g. the disease burden of patients at the clinic was higher or they provided specialized treatment.

6.1.3 *Health professionals*

The focus of reforms during the period 2012 until early 2020 was on changing curricula, qualification standards and training requirements for health professionals. The reforms to the national standards for curricula and examinations are structured according to individual health professions: emergency paramedics (2013), nursing professionals, including paediatric and geriatric nursing (2017), psychotherapists (2019), midwives (2019) and pharmaceutical-technical assistants (2020). Notably, in addition to these, numerous regulations and directives were implemented partly by the Federal Ministry of Health and partly by other actors to overhaul the training of health professionals.

A common characteristic has been to increase the attractiveness of working in various health professions in order to assure workforce capacities in the (near) future. One such measure is abolishing the tuition fees charged by privately funded schools for allied health professions. The need to adapt curricula reflects a number of factors: training requirements had diverged over time (i.e. emergency paramedics are now trained for three years instead of two, in line with other health professionals); gaps in regulation had emerged (i.e. on defining the required skill-sets for nursing professionals); and the need to adopt EU legislation (i.e. EU Directive 2013/55/EU requires the training of midwives at universities) (see Section 4.2.4 Training of health workers). In addition, some curricular changes reflect the medical progress of service delivery and changing morbidity patterns in the population, and some national standards were considered to be outdated (for instance, the national standards for psychotherapists were last reformed in 1998). Reforms also aimed at establishing different and relevant skill-sets for health professions with a stronger focus on e.g. patient-centredness, general medicine or consultation competencies.

6.1.4 *Reforms to long-term care*

As mentioned in Section 5.8 Long-Term care, significant changes have occurred to the long-term care insurance (LTCI) system. The comprehensive reform process started with the Long-term Care Realignment Act (*Gesetz zur*

Neuausrichtung der Pflegeversicherung) in 2012 by broadening the eligibility criteria to formally include persons suffering from dementia. This group was previously referred to through an (improvised) care level 0 and subsequently became Grade I in the new five-grade categorization system. The real reform work started, however, with the First Strengthening Long-term Care Act and its two subsequent Acts (2015, 2017) that completely overhauled the benefits basket, eligibility criteria and assessment procedure and gave greater flexibility for service delivery in LTCI (see Section 5.8 Long-term care). The broadening of eligibility and the LTC benefits basket quickly led to an increase in LTCI spending. Although the broadening of coverage was coupled with multiple and incremental increases in contribution rates for the LTCI (i.e. from 2.05% in 2013 to 3.05% in 2019), concerns about the sustainability of LTCI financing remain strong.

6.2 Future developments

Many of the policy efforts in the near future are likely to be consumed by (i) a push towards greater digitalization in health care especially, in line with the agenda under the German presidency of the Council of the European Union in the second half of 2020; (ii) containment and management during and after the COVID-19 pandemic; and (iii) the continuation or respective implementation of ongoing reforms such as securing a sustainable nursing workforce.

6.2.1 *Digitalization in health care*

The German health system exhibits a comparatively low degree of digitalization, both in terms of overall infrastructure and in the uptake of online health services. For instance, internet coverage with very high capacity networks stood at 33%, which is below the EU average, and overall good coverage of fast broadband is worse in rural areas (European Commission, 2020a). Communication between citizens and public authorities is overwhelmingly paper-based and Germany ranked 26th in the use of electronic government services out of 28 EU Member States in mid-2019 (European Commission, 2020a). Moreover, with specific regard to health services, the use of online

health care services and medical data exchange remains well below the EU average (European Commission, 2020c, 2020d). However, digitalization of health care has been on the political agenda for years. The core reform effort regarding digitalization in health care has been the introduction of an electronic health card (*elektronische Gesundheitskarte – eGK*) as well as securing a safe data exchange among providers since 2005 (see Section 4.1.3 Information technology and eHealth).

The basic roll-out of the eGK has been slow, as has the specification and implementation of medical data storage and its applications. In 2015, nine years after the originally planned basic roll-out, the E-health Act set a timeline for all providers to connect to the safe data exchange and ruled on sanctions in case of further delay. Several features of the eGK were specified, e.g. emergency data storage and a paper-based medication plan for more than three parallel-consumed pharmaceuticals by 2016. Furthermore, electronic patient files (*elektronische Patientenakte – ePA*) were to be implemented by 2019 (which was later postponed to 2021). On a related matter, in 2019 the Federal Ministry of Health became a main shareholder (51%) of gematik GmbH, which has been the main implementation body for the eGK and for securing a safe data exchange among health providers.

In 2019 the Digital Provision Act was passed by the votes of the grand coalition and against the votes of two opposing parties (Alliance 90/The Greens and the Left Party) and by abstention of the other two opposing parties (Alternative for Germany and the Free Democratic Party). Electronic prescriptions are to be implemented by 2021. Furthermore, the legislation contains many measures that came into force in 2020, including:

- ***SHI-covered mobile applications***: the SHI benefits basket is broadened by mobile applications for early detection, monitoring, treatment or management of diseases. Requirements for SHI coverage are firstly the approval and listing of individual mobile applications by the Federal Institute for Pharmaceuticals and Medical Devices and subsequent listing according to §139e SGB V (Bundesinstitut für Arzneimittel und Medizinprodukte, 2020). Secondly, the mobile application has to be prescribed by a physician. Provisionally, mobile applications are to be reimbursed by SHI for the period of one year. During this period manufacturers must prove to the Federal Institute that their mobile applications have a positive effect on service provision;

- ***Safe data exchange***: pharmacies are required to connect to the safe data exchange by September 2020, hospitals by 2021. Other health professionals, such as midwives, allied health professionals and long-term care providers can connect to the safe data exchange on a voluntary basis and are reimbursed for the costs after July 2020. Additionally, the Federal Joint Committee was tasked to develop a directive for securing a safe data exchange (e.g. instalment of software and regular updates at practices); and
- ***Use of data***: comprehensive administrative data that are collected in order to request payment at the point of usage will be made available for research and planning purposes across sickness funds. This data will include various personal information about patients and the services provided (e.g. each provided health care service, costs for each service and the provider). The Federal Association of Sickness Funds has become the responsible authority for compiling these data across sickness funds, securing data protection and anonymizing the data. It will also handle requests to access these administrative data by authorized bodies (§303 e SGB V).

In continuation from the 2019 legislation, the government proposed another bill on matters of digitalization which was passed in the second half of 2020. The Patient Data Protection Act proposes additional applications, such as electronic referral letters and the obligatory use of electronic prescriptions (also via mobile applications) by 2022. At the core of the proposal, however, are specifications on electronic patient files that are to be launched via a two-stage process:

- In the first step, from January 2021 onwards, patients can gain access to electronic patient files and their currently stored medical data such as diagnoses, treatment reports, electronic medication plans (made available in 2019) and emergency data, as well as additional health-related information. Additionally, patients will be able to add and/or delete information from their electronic patient file. Sickness funds are required to enable access at the request of the insured (with the eGK as authentication). Providers are legally obliged to contribute information to electronic patient files at the patient's request (and will receive a one-off reimbursement of € 10);

additional information will be automatically transferred to the electronic patient files once the set-up is ready and the electronic patient file should be also available via mobile applications by 2021.

- In the second stage, from January 2022 onwards, patients will be able to manage individual access rights of providers to their files. In addition, the electronic patient file will support a range of other applications such as the electronic vaccination card and the electronic examination booklet for children. Patients can opt to share their electronic patient file with research institutions from 2023. In 2023 an electronic certificate of incapacity for work will be supported by the electronic patient file.

The digitalization and safe exchange of health-related data within the EU (European Health Data Space) were also on the agenda of Germany's presidency of the Council of the EU (Bundesministerium für Gesundheit (BMG), 2020d).

6.2.2 *Containment and management of the COVID-19 pandemic*

The German presidency of the Council of the EU in the second half of 2020 kicked off the 'trio'-presidency of Germany, Portugal and Slovenia until the end of 2021. The agenda of the presidency was recalibrated to account for the COVID-19 pandemic as an "*unprecedented threat to the European project*" and its social, economic and political consequences (Council of the European Union, 2020). Chancellor Merkel stressed in June 2020 that the pandemic had also shed light on the fragility of the European project and that the first reactions to contain the pandemic were at national level (Merkel, 2020). The presidency – with the motto "Together for Europe's recovery" – featured health politics more prominently, with an emphasis on securing the provision of necessary pharmaceuticals or other necessary medical products during the pandemic and its aftermath.

At the time of writing (December 2020), the pandemic situation in Germany is dynamic, with rising infection rates and reported deaths associated with COVID-19 (European Centre for Disease Prevention and Control, 2020; Robert Koch-Institut (RKI), 2020a) (see also Section 5.1 Public Health). A detailed account of the German containment measures is

described in various databases, for instance see the European Observatory's COVID-19 Health Systems Response Monitor: https://www.covid-19healthsystem.org/countries/germany/countrypage.aspx.

6.2.3 *Continuation and implementation of ongoing reforms*

The next elections in Germany are scheduled at the state level (a total of five states) and for the German parliament in 2021 (Deutscher Bundestag, 2020). On its health policy agenda, the ruling grand coalition aims to achieve better coordination between providers, securing accessible care and increased digitalization in health care. A main challenge is perceived to be shortages of nursing personnel and securing a sustainable nursing workforce (European Commission, 2020d). Ensuring effective delivery after the overhaul of eligibility and benefits under the long-term care insurance (see Section 5.8 Long-term care) is also a major challenge.

7

Assessment of the health system

- Transparency in the health system is weakened somewhat by the co-existence of SHI and substitutive PHI, especially in terms of entitlements to benefits and regulations and in terms of the complex criteria determining who is insured in which system. Coordination of care and information flows across the ambulatory and inpatient sectors is reported to be difficult for patients and providers, particularly for patients with high needs, vulnerable patient groups and where several sectors are involved in a patient's treatment.
- Germany provides universal health coverage to its population with a broad benefits package and low cost-sharing requirements. A dense network of health care providers ensures overall high availability of services across the country, albeit with lower accessibility in rural areas. The results of surveys show that reported unmet needs for medical care are very low.
- The comparatively low share of out-of-pocket payments in health financing and financial safety nets contribute to strong financial protection for the population. Consequently, levels of catastrophic health expenditure among the population are lower than in most other European countries.
- The quality of ambulatory care in Germany is comparable to neighbouring countries, while the quality of inpatient health care, as measured by a set of defined indicators, has increased since 2000. However, there is room for improvement, particularly on metrics

such as hospital mortality within 30 days after admission for an acute myocardial infarction (AMI).

- Population health outcomes, reflected by data on amenable and preventable mortality, have improved over the last two decades, showing the capacity of the health system to treat diseases in a timely and appropriate manner or to avoid the onset of diseases altogether. However, compared to other European countries, based on this metric and other population health outcomes, Germany's results are moderate and inequities exist along socioeconomic and regional lines. Although it is difficult to attribute direct causal links between the health system and population health, the evidence does show that health expenditures are higher than in most other EU countries, and thus, from a macro-economic perspective, the somewhat mixed outcomes are achieved at a relatively high cost.
- Germany has large human, technical and infrastructural capacities at its disposal and makes frequent use of these resources. Utilization of both inpatient and outpatient care is high and there are indications of oversupply of services, a phenomenon that is also visible in high pharmaceutical consumption.

7.1 Health system governance

7.1.1 *Transparency*

The governance of the German health system is highly complex and varies between SHI and substitutive PHI. Within SHI, governance relies strongly on self-government structures and the sharing of decision-making powers between the federal, state and corporatist levels (see Section 2.2 Organization). These self-governance structures have existed since the start of the SHI system in 1883. Although self-governance initially applied only in the sickness funds, the structures were broadened to joint commissions of payers and providers as early as 1913. Since then, responsibilities have been extended and reached a peak with the creation of the Federal Joint Committee in 2004 (see Section 2.1 Historical background). Within the structures of self-government, most legal rights and responsibilities,

such as defining the benefits package, setting prices and outlining quality requirements, are delegated to corporatist bodies, while institutions at the federal level are responsible for setting the legal framework and supervision. Adhering to the principle of self-governance guarantees stability and the building of expertise in day-to-day management. On the other hand, the development of health policy and implementation depend on continuous bargaining between many (often highly specialized) stakeholders, and discussions about competencies between the federal, state and corporatist levels, and only result in gradual changes to the overall architecture and management of the health system (OECD/European Observatory on Health Systems and Policies, 2019; Busse et al., 2017b). In terms of financial or organizational probity, there is no single indicator that sheds light only on the health system. An illustrative example of the functioning of the public sector overall can be found in Germany's score of 80 on Transparency International's corruption perception index* in 2019, on a scale from 0 (highly corrupt) to 100 (very clean; no perceived corruption), ranking 9th out of 180 countries. In comparison, Denmark and New Zealand jointly scored 87 as the best performing countries, Switzerland scored 85 (4th) and the Netherlands 82 (8th), while Austria and Belgium ranked below Germany and the EU average was 66 (Transparency International, 2020a).

Transparency in the health system is weakened somewhat by the coexistence of SHI and substitutive PHI, especially in terms of entitlements to benefits (benefits depend on the chosen premium in substitutive PHI) and in terms of the complex criteria determining who is insured in which system (see Section 3.3.1 Coverage). Furthermore, navigating through the various providers is difficult, especially for patients with high needs for health services, for vulnerable patient groups (e.g. those requiring psychiatric care) and where several sectors are involved in a patient's treatment (e.g. long-term care, rehabilitation).

Care coordination, particularly in terms of required information flows, is reported to be challenging for patients and providers alike. In the 2019 Commonwealth Fund International Health Policy Survey of Primary Care

* The Corruption Perception Index aggregates data from 13 different data sources that vary across countries. The sources of information are based on data published in the previous two years. The index includes only sources that provide a score for a set of countries/territories and that measure expert perceptions of corruption in the public sector by the means of surveys and expert opinions. Captured aspects are bribery; diversion of public funds; public office for private gain, etc. (Transparency International, 2020b).

Physicians, only 5 in 10 surveyed physicians in Germany received the patient history for (further) consultation, 3 in 10 were informed about changes in the medication or care plan (this was the lowest value reported in 11 countries), and 1 in 10 received information from specialists within a week (the second lowest value after the UK). Coordination with inpatient care was reported to be slightly better: roughly 5 out of 10 primary care physicians were informed when a patient was admitted to a hospital. On the other hand, 74% of primary care physicians reported that they regularly coordinated a patient's care with social services (this was the highest value reported in 2019). In terms of using information technology, German physicians reported the lowest value when it came to exchanging medical information online with other providers outside their practice (12%; down from 22% in 2015), as well as diagnostic information (32%), and medication lists (14%) (Doty et al., 2019; Osborn & Schneider, 2015). In contrast, from a patient perspective, only 19% of surveyed Germans reported that they had experienced a problem with care coordination in 2016 (Osborn & Squires, 2016), a result that contrasts markedly with the 2013 survey wave, when the majority of Germans reported that they had experienced (at least) one care coordination problem (Penm et al., 2017). Although overcoming fragmented service delivery has been the aim of several pieces of legislation, it is the ongoing process of digitalization that has the most potential to improve the traceability of medical data and apply it to aid the coordination of patients' care (see Section 6.2 Future developments).

As an indicator of people's satisfaction with the health services they receive, 60% of surveyed Germans said that the health care system is working pretty well and only minor changes are needed, which was the highest value reported across the 10 surveyed countries in 2016. An additional 37% said that there are some good things about the health care system but fundamental changes are needed, and only 3% indicated the need to completely rebuild the German health care system (Commonwealth Fund, 2016). It is noteworthy that consumer association centres reported that only 3.4% of the 120 000 claims that were made in 2019 dealt with health-related issues (e.g. claims against the costs of health services) (Verbraucherzentrale Bundesverband e.V., 2019). Moreover, 128 070 consultations were managed by the independent patient counselling services in 2019, and a vast majority of these consultations (83 240) were provided on legal matters, including entitlements to benefits, patient rights and changing insurance fund membership,

and one fifth sought advice on medical matters. Table 7.1 provides a more detailed overview of the consultations. Also in 2019, roughly 11 000 claims for medical errors were filed by patients and reviewed, out of which 5500 arose in inpatient care (where 1500 were confirmed cases of medical errors) and 1800 in ambulatory care (500) (Bundesärztekammer, 2020b).

TABLE 7.1 Topics of consultations managed by independent patient counselling services, 2019

TOPIC OF CONSULTATION	NUMBER	SHARE (%) OF ALL CONSULTATIONS
Legal matters	**83 240**	**65**
Entitlements to benefits	**38 329**	**30**
Patients' rights	16 184	13
Changing membership or voluntary insurance	7 762	6
Alleged medical errors	6 154	5
Legality of co-payments	3 575	3
Other legal matters	11 236	9
Medical advice	**25 435**	**20**
Search for medical counselling	10 099	8
Search for a specific health provider	6 407	5
Other advice topics	8 929	7
General advice	**19 395**	**15**
Total number of consultations	**128 070**	**100**

Source: UPD Patientenberatung Deutschland, 2019

7.1.2 *Accountability*

Traditionally, reform priorities are set within the context of defining core values (e.g. solidarity) or overall policy goals (e.g. cost-containment, fostering competition, enhancing technical efficiency) in SHI and are only partly addressed in substitutive PHI. National health goals exist only in the area of prevention but lack operationalized indicators to track the effectiveness of implementation (see Section 2.4 Planning). Overall, the formulation of a strategic vision and central targets with clear responsibilities among various

stakeholders could help to set priorities in health reform activities (OECD/European Observatory on Health Systems and Policies, 2017), and in doing so, introduce greater accountability into the health system.

Performance reporting is legislated for several providers (e.g. hospitals' report cards compile structural, process and outcome indicators at the hospital and medical department level for 30 tracer diagnoses and procedures), but varies across sectors, and the interpretation of reported results can be challenging (Pross et al., 2017). The Institute for Quality Assurance and Transparency in Healthcare (*Institut für Qualitätssicherung und Transparenz im Gesundheitswesen – IQTIG*) is tasked with centralizing quality reports at the national level and publishing these annually (Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG), 2019). At a system-wide level, performance reporting is hindered by the fragmentation of databases and the variety of stakeholders and their focus on either specific diseases or particular aspects of the health system. Even though there is a broad information basis for Health System Performance Assessment (HSPA) in Germany (also provided by international databases such as those of Eurostat, OECD or WHO), information on some sectors (e.g. palliative care) is missing completely and thus cannot be used to inform health system performance reporting. A current initiative by the Federal Ministry of Health is piloting an HSPA of the German health care system, which should also address the issue of missing data availability.

7.1.3 *Population participation and patient involvement*

User experiences in the German health care systems are surveyed – for instance – by the Commonwealth Fund (reported via OECD; see also Section 2.8 Person-centred care). In ambulatory care, the survey refers to a "regular doctor", which mostly translates into providers of primary ambulatory care in Germany (specialized ambulatory care is missing from the survey). In 2017, 85.8% of surveyed people over the age of 16 in Germany reported that they spent enough time with their regular doctor during a consultation (down from 92% in the 2010 survey wave, and 88.4% in 2013), ranking higher than the corresponding OECD average (80.6%). Also in 2017, 84.3% of those surveyed reported that they received easy-to-understand explanations from their regular doctor (down from 94.7% in 2010). In comparison, this

indicator received a positive response of more than 90% in the Netherlands, Switzerland and the UK, while the OECD average stood at 88.5% (OECD, 2019). Finally, 87.2% of surveyed persons reported that they have been involved in decisions about their care and treatment (equal to the 2010 survey: 87.6%), compared to the Netherlands (91.3%) and Switzerland (88.9%); the OECD average was 83.6%.

At the macro level, patient organizations are involved in decision-making processes. For instance, up to five members are represented at the plenum in the Federal Joint Committee vis-à-vis representatives of payer and provider organizations and exercise an advisory role (but have no voting rights). Moreover, as a testament to the history of SHI (and all other social insurance schemes), it is noteworthy that sickness funds have to be governed by administrative boards that have an equal number of representatives of workers and their employers (the only exception being some sickness funds that have governing boards solely made up from the insured) (Gerlinger, 2015). Representatives are elected every six years for all insurance schemes (most recently in 2017).

7.1.4 *Policy capacity*

Policy capacity in the German health care system (e.g. the expertise to monitor developments, review evidence and draft legislation) is hard to capture beyond assessing resources. Resulting from the decentralized governance structures, a comparatively large workforce is employed in administration. In 2018 a total of 220 000 administrative staff was reported for the health system (including in substitutive PHI, other insurance schemes and state health ministries), among them 5000 medical doctors (GBE-Bund, 2020f). In terms of financial resources, Germany spent 5.2% of its current health expenditure on administration in 2017 (down from 6.2% in 2000) (OECD, 2020d). In comparison with other EU Member States, Germany recorded the second highest expenditures for administration (after France), and ranked higher than the average of the 15 EU countries for which this information was available (3.7%).*

* In this respect, it is likely that actual administrative costs in Germany are underestimated (Blümel et al., 2012).

7.2 Accessibility

7.2.1 *Population coverage and the benefits package*

Health insurance is mandatory in Germany, either in SHI or substitutive PHI (see Section 3.3.1 Coverage), resulting in nearly universal coverage for residents (99.8%), but with certain population groups at risk of not having health insurance, e.g. low-income self-employed people (see Box 3.1). Between 2015 and 2019 the share of uninsured people declined from around 79 000 to 61 000 people, of whom the majority were male (63.9%) and working (57.4%) (Statistisches Bundesamt, 2020a). This decrease in the number of uninsured is in line with two pieces of related legislation in 2013 and 2018 (see Section 6.1 Analysis of recent reforms) which aimed to reduce the risk of not having health insurance due to financial or administrative hurdles for certain population groups.

Every person insured under SHI has the same entitlement to benefits. The SHI benefits basket is regulated in Social Code Book V and elaborated in detail by the Federal Joint Committee (see Section 2.7.3 Regulation of services and goods). In addition, in competition with other sickness funds, each sickness fund may grant further benefits (e.g. complementary and alternative medicine, such as homoeopathy, osteopathy, acupuncture), which then must be accessible for all those insured in the respective sickness fund. Dental care, dental prostheses and orthodontics are also included in the SHI benefits package (see Section 3.4.1 Cost sharing (user charges)), along with all licensed prescription pharmaceuticals (see Section 3.7.1 Paying for health services). Those with PHI are usually entitled to equal or even more benefits than those with SHI, depending on the chosen premium. The benefits package is limited for asylum seekers, recognized refugees and undocumented migrants in the first 15 months of their stay, mostly to emergency, maternal and preventive care (e.g. screenings and vaccinations) (see Box 3.1).

7.2.2 *Availability of services*

By international comparison, Germany scores very well in accessibility to health care. Surveys by the Commonwealth Fund – as well as other studies – often conclude that Germany comes out as one of the best countries

on the question of access to medical care (Osborn et al., 2016; Schneider et al., 2017; Schoen et al., 2011; Schoen et al., 2013). For example, in 2016 the Commonwealth Fund survey showed that only 3% of respondents waited two months or longer for an appointment with a specialist, lower than the level of 10% recorded in 2013. Moreover, cost-related access problems to medical care were reported in Germany by 7% of interviewed people in 2016 (down from 15% in 2013) (Osborn et al., 2016; Schoen et al., 2013).

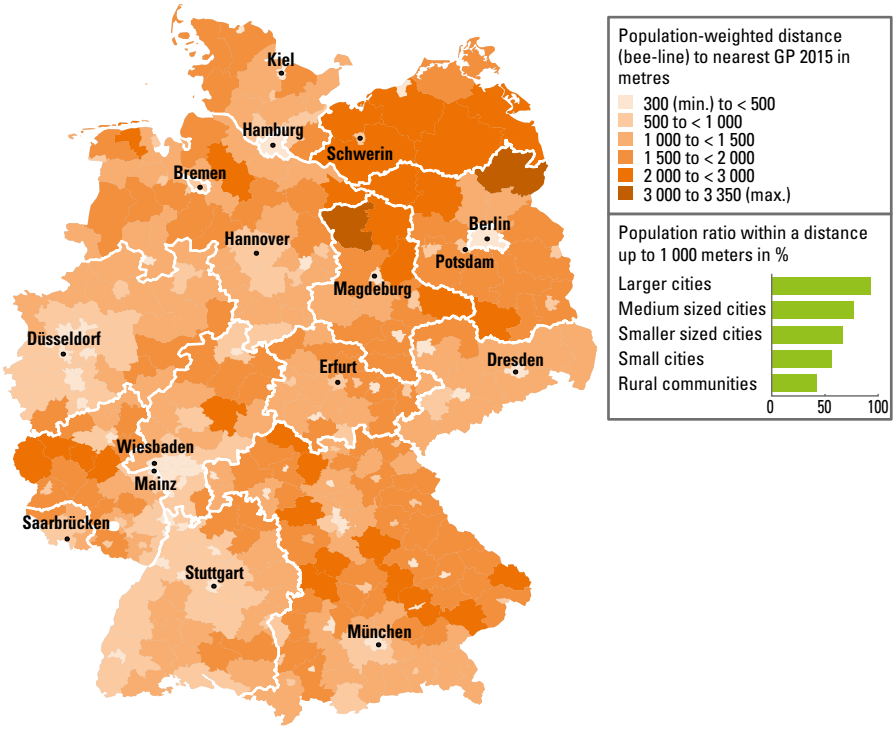
In addition, according to OECD data, Germany ranked third among OECD countries in a modelling exercise on reported visits to a physician in the past year when adjusted for need (need-adjusted probability of visiting a physician*) in 2014. With an average of 86.4% probability of seeing a physician in Germany (the difference between the lowest and the highest income quintile ranged between 83.9% and 87.6%), which was above the OECD average of 78.6% (range 75.1–81.4%). For dentists, the probability was also high, with an average of 82.0% (ranging between income quintiles 78.0–83.1%) ranking Germany in second place, and far above the OECD average of 63.0% (OECD, 2019).

Overall, Germany has a dense network of hospitals and thus a high overall availability of inpatient care, but the availability of facilities across the country varies between urban and rural areas and according to particular areas of specialist care (see Box 4.1). Although the number of all hospital beds per 1000 population decreased from 9.1 in 2000 to 8.0 in 2018, Germany was far above the EU average (5.0 per 1000 population) in 2018 and was the EU country with the highest hospital bed density, followed by Austria (7.3) and France (5.9) (OECD, 2020b). In terms of human resources, Germany scores very well in numbers of physicians and nurses (see Box 4.2). According to the most recent Eurostat data (2018), there were 431 practising physicians per 100 000 population in Germany, compared with an EU average of 369. With 1322 practising nurses per 100 000 population, Germany was again above the EU average of 816 in 2018 (Eurostat, 2020b; OECD, 2020b). By international comparison, physicians are generally evenly distributed across Germany (OECD, 2019). However, there are still distributional variations,

* The probability of visiting a physician is defined as "having seen a GP or a specialist in the past year" (OECD, 2019). Because people have varying health needs, the amount of care a person receives cannot measure access accurately. Hence, the needs are predicted via modelling and adjusted by age, gender, health status and activity limitations (see O'Donnell et al., 2012) to derive the metric of "need-adjusted probability of visiting a physician".

often quite significant, both between the states and between urban and rural areas (see Sections 4.2.2 Trends in the health workforce and 5.3 Primary care). As is the case in most countries, there is a lack of specialists in rural areas, with patients having to travel to larger towns and cities for treatment. Moreover, while there tends to be an oversupply of physicians in many urban areas, regions with a low population density generally have a shortage of physicians. Figure 7.1 shows the accessibility of GPs in terms of distance (in metres) to the closest GP practice.

FIGURE 7.1 Distance to the nearest GP (in metres), 2015



Source: Modified figure based on Federal Institute for Research on Building, Urban Affairs and Spatial Development, 2019. Database: BBSR Spatial Monitoring System, Wer-zu-Wem-Verlag. Geometric database: Kreise, 31.12.2014 © BKG/GeoBasis-DE.

A major problem affecting access to medical care is the different remuneration structures in SHI and PHI, which lead to clear financial incentives for physicians (see Section 3.7.1 Paying for health services). Privately insured patients are more lucrative and receive preferential treatment (Huber & Mielck, 2010). Several studies highlight that in comparison with privately insured

patients, SHI patients have shorter consultation times with a physician, and feel less well advised and less involved in the decision-making process (Becklas et al., 2012; Huber & Mielck, 2010; Mielck & Helmert, 2006; Neumann et al., 2011). Empirical data show that PHI patients also have better access to medical care in the form of short waiting times (Klein & Knesebeck, 2016; Lüngen et al., 2005; Lüngen et al., 2008; Luque Ramos et al., 2018; Roll et al., 2012; Schellhorn, 2007; Schwierz et al., 2011).

Contrasting with these studies, though, the regular survey of those insured under SHI and PHI conducted by the Federal Association of SHI Physicians in 2020 shows that in some cases people with PHI had to wait longer than those with SHI. For example, only 29% of those insured under PHI received a prompt physician's appointment (GPs and specialists) compared to 32% of those insured under SHI. For specific types of physician services, the results are more mixed: to see a GP, 20% of SHI insured people had to wait more than three days for an appointment compared to 15% of those with PHI; but for a specialist's appointment, 29% of SHI insured reported a waiting period of up to three days whereas this was the case for 32% of PHI insured. More generally, while 10% of SHI insured stated that their waiting period was too long, 7% of people with PHI were dissatisfied with the time they had to wait for a physician's appointment (Kassenärztliche Bundesvereinigung (KBV), 2020f). The introduction of the Strengthening Appointment Service Points and Care Delivery Act (*Terminservice- und Versorgungsgesetz*) in 2019 aimed at reducing waiting times for a physician's appointment for SHI patients.

According to another survey conducted by the consultancy Health Consumer Powerhouse, Germany ranked 12th out of 35 European countries regarding the overall consumer friendliness of the health care system in 2018. Specifically in terms of access, Germany ranked rather low (23rd) with respect to obtaining an appointment with a primary care physician on the same day, but better on direct access to specialists without a GP referral (8th) and with waiting times for elective surgeries (7th) (Björnberg & Phang, 2019).

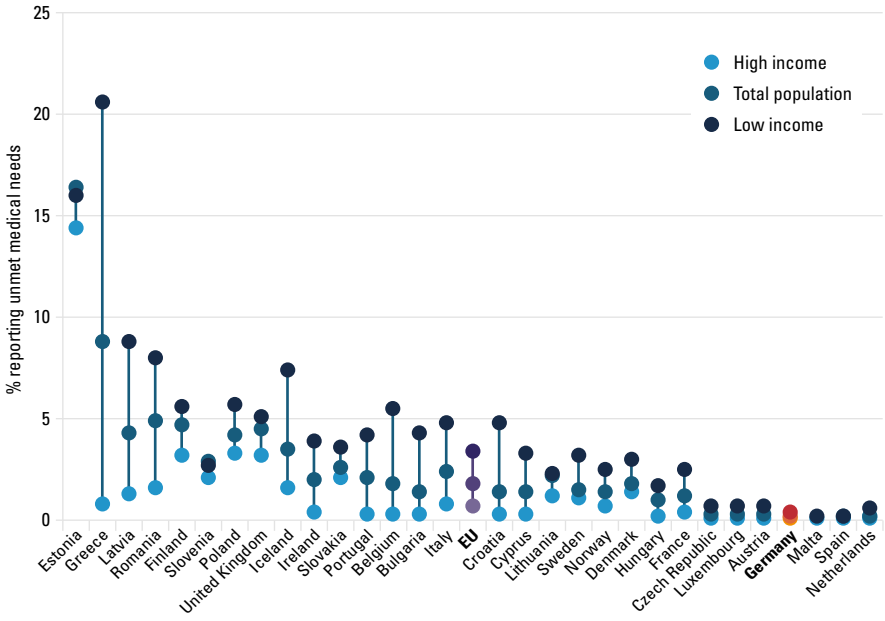
7.2.3 *Forgone care and unmet needs for medical and dental care*

In 2018 only about 0.2% of the population reported unmet needs for a medical examination (due to the combined reasons of cost, waiting time or travel

distance) (Eurostat, 2020a). Compared to other EU countries, Germany ranks 4th only after Malta, the Netherlands and Spain (see Figure 7.2). Unmet need is higher for lower income groups than for higher income groups, but the difference between the lowest (0.4%) and highest (0.0%) income quintile is marginal. Similar results are found for dental care: around 0.9% of the population in the lowest income quintile skipped dental examinations due to cost (compared to 0.0% in the highest quintile). Self-reported unmet needs in Germany is related more to people's perceptions about barriers (e.g. because of longer waiting times or not having PHI) rather than to financial barriers (Röttger et al., 2016).

Specifically on the question of forgone care due to cost, the results of the European Health Interview Survey (Wave 2) in 2014 presented by the OECD in its *Health at a Glance* report (2019) show that Germany ranks among the top half of OECD countries on the question of whether the costs associated with medical treatment deterred patients from seeing a physician: some 6.7% of people in the highest income quintile and 22.9%

FIGURE 7.2 Unmet needs for a medical examination (due to cost, waiting time or travel distance), by income quintile, EU/EEA countries, 2019 or latest available year



Source: Eurostat, 2020a

Note: Data refer to unmet needs for a medical examination or treatment due to costs, distance to travel or waiting times

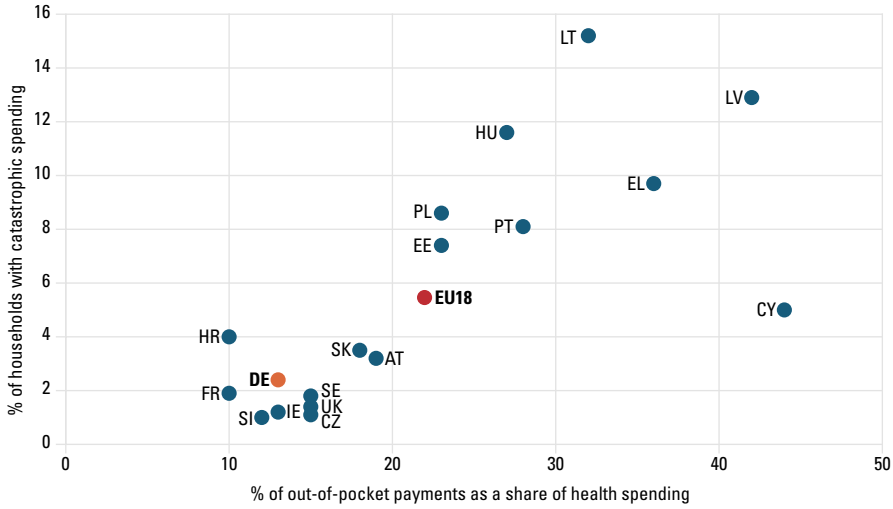
in the lowest quintile stated that they had not consulted a physician due to reasons of affordability. On average, Germany (13.4%) performs better than the OECD average (17.2%), but had a considerably higher rate than the Netherlands (5.7%), UK (6.5%) and Austria (9.9%) (OECD, 2019).

In conclusion, overall accessibility to health care in Germany is good, the availability of physicians, nurses and hospitals is among the best in Europe, and only a few people report unmet needs for medical care. Current reforms aim to improve access to out-of-hours care e.g. by establishing health centres ("Portalpraxis") in hospitals (see Section 5.5 Urgent and emergency care) and through hospitals providing ambulatory care. Other measures aim to counteract potential health workforce shortages, especially in rural areas, e.g. by making the nursing profession more attractive and by providing financial incentives to young physicians to open a practice in rural areas.

7.3 Financial protection

Health coverage is almost universal in Germany and sickness funds provide a broad benefits package that includes sick pay as well as dental care, dental prostheses and orthodontics. Although considerable user charges apply in the form of co-payments, overall, private out-of-pocket expenditure on health is relatively low (see Section 3.4 Out-of-pocket payments). According to Eurostat data, out-of-pocket (OOP) expenditures were lower in Germany (12.5% of total health expenditure; 6th lowest) than in most other EU countries in 2018 (Eurostat, 2020a). Similarly, data from Germany's Federal Statistical Office show that OOP expenditure as a share of total health expenditure increased from 12.7% to 13.3% between 2000 and 2018. In terms of sectors, the largest category of OOP expenditure in 2018 was associated with inpatient long-term care (€ 14.5 billion or 27.8%), followed by pharmaceuticals (€ 10.4 billion or 20.0%), medical aids (€ 7.2 billion or 13.9%), dental care (€ 6.6 billion or 12.6%), and ambulatory long-term care (€ 5.5 billion or 10.5%) (Statistisches Bundesamt, 2019c) (see Section 3.4 Out-of-pocket payments). In terms of OOP spending measured as a percentage of total household consumption, available international data show that Germany, at 2.8%, is below the EU average of 3.3% (OECD, 2020b). According to the latest available national income and consumption survey

FIGURE 7.3 Share of out-of-pocket payment versus catastrophic spending, 2015 (or latest year)



Sources: OECD/European Observatory on Health Systems and Policies, 2019; OECD, 2020d; World Health Organization Regional Office for Europe, 2020

data from 2013,* the average OOP spending on health as a share of total household consumption was slightly above 3% in 2013 with a 1.6%-points gap between households in the poorest quintile (2.2%) and households in the richest quintile (3.8%) (Siegel & Busse, 2018).

In 2004 OTC pharmaceuticals were excluded from the SHI benefits catalogue and a co-payment of € 10 for the first ambulatory care physician visit in a quarter (*Praxisgebühr*) was introduced. The effects of the introduction of the *Praxisgebühr* and its subsequent abolition in 2012 resulted in an increase in the share of OOP spending on ambulatory care, which doubled from 6.4% in 2003 to 13.8% in 2008 and then fell back to 6.5% in 2013. Between 2003 and 2008 this share increased by more than four times for the poorest income quintile (from 4% to 18%). It was also pronounced for the second and third quintiles, but much less for the two richest quintiles (Siegel & Busse, 2018).

In 2013 an estimated 2.4% of households spent more than 40% of their capacity to pay on health care. This is a relatively low proportion of households with "catastrophic OOP payments" compared to other EU countries (Figure 7.3).

* Data for 2018 have been published in July 2020 but not yet analysed in terms of financial protection.

Catastrophic spending is more highly concentrated among households with people over 60 years of age and in households receiving social benefits. The increase in co-payments and user charges in 2004 also contributed to an increase in catastrophic OOP payments amongst low income households. Households in the poorest quintile accounted for more than 50% of all households with catastrophic spending in 2003, rising to 70% in 2008 and falling slightly to around 63% in 2013. In 2013, 4.6% of households in the poorest quintile experienced catastrophic spending, rising to 11% in 2008 and falling to 7.4% in 2013 (Siegel & Busse, 2018).

It is important to highlight that the level of OOP spending alone does not give a comprehensive assessment of financial protection. For example, it is possible that a person may forgo needed care because the service is not included in the benefits basket or considerable user charges apply. So even though no OOP payments are made, fair and equal access to care is not provided. However, as shown in Section 7.2 (Accessibility), Germany has good coverage and accessibility, and unmet need for medical care is driven less by financial reasons than by other factors such as waiting times. In fact, the share of people reporting unmet needs for a medical examination specifically due to the reason of cost was only 0.1% in 2018 (Eurostat, 2020a).

Although co-payments are comparatively low in Germany, the legislature has implemented measures particularly designed to protect low-income sections of the population and the chronically ill from excessive financial burdens. This means that patients whose co-payments exceed 2% of their gross household income are exempted from further co-payments. The threshold in the case of patients with a chronic disease is 1%. Furthermore, children under 18 years of age are generally exempt from co-payments (see Section 3.3.1 Coverage). Other recent legislation was implemented to close coverage gaps and strengthen financial protection. Low-income self-employed individuals are one population group with a higher risk of being uninsured since it can be difficult for them to afford SHI contributions or PHI premiums (see Box 3.1). Up to January 2019 the self-employed paid an SHI contribution based on an expected minimum income of € 2284 per month (independent of their actual income), which was found to be unmanageable for a large proportion of small business owners. In response, the SHI Contribution Relief Act (2018) halved the reference amount used to calculate the minimum contribution. Moreover, the Strengthening Appointment Service Points and Care Delivery Act (2019) expanded SHI

benefit coverage by adding (1) the costs of cryopreservation for young adults suffering from cancer, and (2) pharmaceuticals for the prevention of HIV infections ("pre-exposure prophylaxis" – PrEP) for people with an increased risk of infection.

7.4 Health care quality

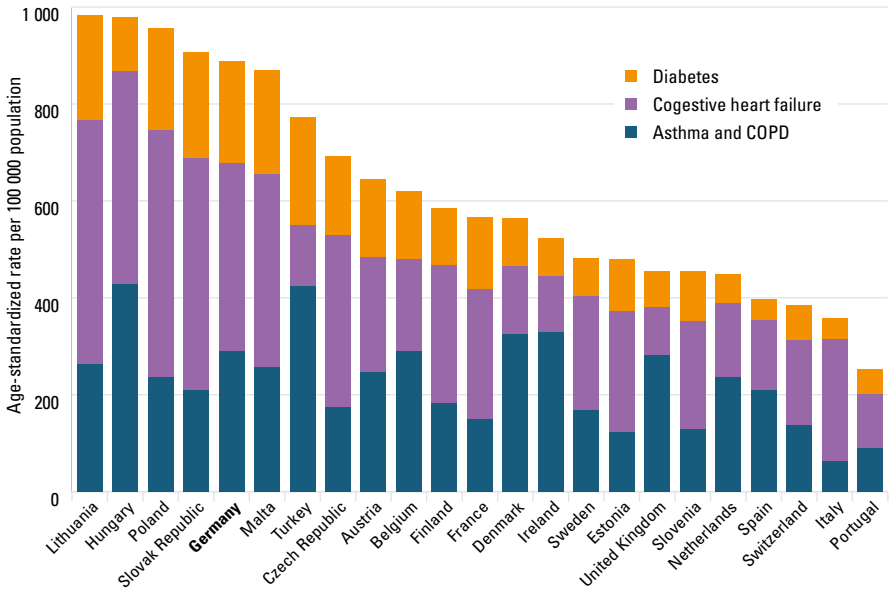
The quality of medical care is often measured and internationally compared on the basis of the OECD Health Care Quality Indicators Project. Selected indicators are used to measure health outcomes or improvements in the aspects of health status that can be attributed to medical care, such as avoidable hospital admissions, the prescription of pharmaceuticals for primary care and the 30-day mortality rate for acute hospital care (Arah et al., 2006; Carinci et al., 2015; OECD, 2018, 2020c). Due to methodological complexities the data presented below should be interpreted with caution, especially with regard to international comparability.

7.4.1 *Primary (ambulatory) care*

The quality of medical care in the ambulatory sector is measured by avoidable hospital admissions, referring to indications which could have been treated effectively and in a timely manner in ambulatory care, such as asthma and diabetes (Burgdorf & Sundmacher, 2014; OECD, 2018).

According to the Health at a Glance report (OECD, 2020b), Germany's age-sex-standardized rates per 100 000 population for avoidable hospital admissions in the case of chronic diseases in 2017 were 389 for congestive heart failure (CHF), 290 for asthma and chronic obstructive pulmonary disease (COPD), 261 for hypertension and 209 for diabetes (see Figure 7.4). Between 2005 and 2017 the rate increased for asthma and COPD (+37%), hypertension (+14%) and CHF (+12%) in Germany but decreased for diabetes (-15%). Among the selected countries, Germany ranked fifth highest overall for avoidable hospital admissions (see Figure 7.4), and compared to the EU averages for CHF (276), asthma and COPD (209) and diabetes (131), Germany recorded higher figures for all of these chronic conditions (OECD, 2020b).

FIGURE 7.4 Avoidable hospital admission rates for asthma and chronic obstructive pulmonary disease, congestive heart failure and diabetes-related complications, Germany and selected other countries, 2017



Source: OECD/European Observatory on Health Systems and Policies, 2019

The relatively high numbers of avoidable hospital admissions for asthma and COPD, diabetes and CHF in Germany are recorded despite Germany having a large ambulatory care sector and introducing Disease Management Programmes for certain diseases (e.g. for diabetes and asthma) and integrated care models over the last few years with the aim of enhancing provider coordination and quality of chronic care (Busse et al., 2017b). These high hospital admission rates might be partly explained by disease prevalence, but are also likely due to insufficient coordination, continuity and collaboration between the ambulatory and inpatient sectors (see Box 5.4) (OECD/European Observatory on Health Systems and Policies, 2019). It should be borne in mind, however, that these data derive from only one available source and there is a lack of national data. Hence, these results need to be handled with caution.

In terms of antibiotic prescribing, Germany's volume of 12.3 DDDs per 1000 population per day in 2017 was far lower than the EU average of 17.4, and also below the selected countries France (23.0), the Netherlands (14.3) and Denmark (13.9), but only slightly above Austria (12.1). Compared to the

volumes of antibiotic prescribing in 2010, a decline in antibiotic prescribing between 2010 and 2017 can be seen in almost all of the selected countries France (-20%, down from 28.2), Denmark (-16%, down from 16.5), Austria (-19%, down from 15.0), Germany (-15%, down from 14.5) and the EU average (-14%, down from 20.2). The only country with a contradictory development was the Netherlands (+28%, up from 11.2) (OECD, 2019, 2020b).

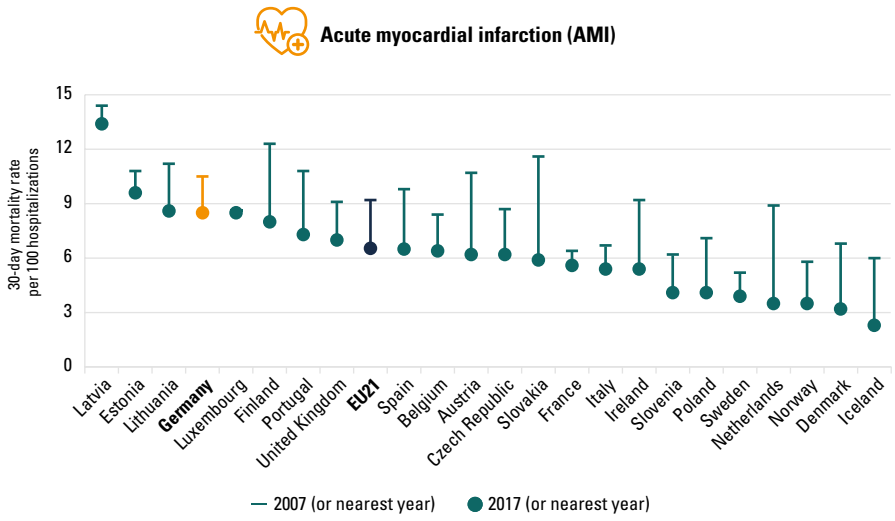
7.4.2 *Hospital (inpatient) care*

Germany scores comparatively well in the medical care of patients who have suffered a stroke. In 2017 Germany had a relatively low case-fatality rate of 6.0% within 30 days after admission for adults aged 45 and over hospitalized following an ischemic stroke (down from 7.8% in 2007). Although 12 countries had lower rates in 2017, Germany was, according to the *Health at a Glance* report, below the EU average of 9.5% (OECD, 2019, 2020b). After the introduction of stroke units and their implementation in the DRG reimbursement scheme for the treatment of ischemic strokes in 2006, the mortality rate declined subsequently, with a reduction of around 33% between 2005 and 2007 (Nimptsch & Mansky, 2014).

In contrast, the results for hospital mortality rates within 30 days after admission for an acute myocardial infarction (AMI) are higher than in many other EU countries. The age- and gender-standardized rate in Germany was 8.5% in 2017 (down from 10.5% in 2007), but significantly above the EU average of 6.5%. The figures are lower (in some cases substantially) in all the selected comparable countries in Figure 7.5: Denmark (3.2%), the Netherlands (3.5%), Switzerland (5.1% in 2014), France (5.6%) and Austria (6.2%) (OECD, 2019, 2020b).

For hip fractures, the rate for having surgery within two days of admission to hospital was 91.4% in Germany in 2017. This was well above the EU average of 75.9%, but below Denmark (96.9%) and the Netherlands (96.0%) (OECD, 2019, 2020b). And finally, current initiatives, such as the report "Hospital landscape North Rhine-Westphalia", suggest that performance-oriented hospital planning should be linked with concrete quality specifications as a way of implementing a quality-oriented planning approach in order to further improve quality in inpatient care (PD – Berater der öffentlichen Hand et al., 2019) (see Section 5.4.3 Inpatient care).

FIGURE 7.5 In-hospital mortality rates (deaths within 30 days of admission) for admissions following acute myocardial infarction, Germany and selected countries, 2007 and 2017



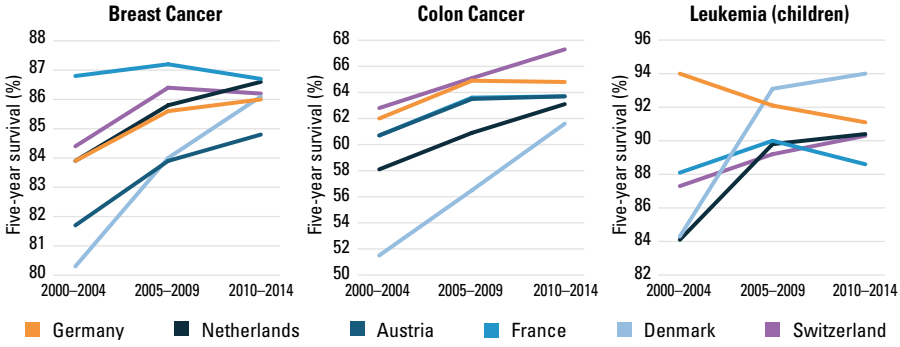
Source: OECD/European Observatory on Health Systems and Policies, 2019

Note: Figures are based on admission data and have been age-sex standardized to the 2010 OECD population aged 45+ admitted to hospital for AMI

7.4.3 *Cancer care*

Oncological care can be seen as the litmus test of a health system due to special challenges in logistics (e.g. invitations to screenings), the use of innovative technologies, the interaction of teams in the inpatient sector (surgeons, psychologists, nursing staff) and professional aftercare in the ambulatory sector. Regarding cancer care, comparable data are available for certain screening activities, relative five-year survival rates of patients, as well as population-based mortality rates. The relative survival rates in Germany over a five-year period (2010–2014) were 91.1% for childhood acute lymphoblastic leukaemia (OECD average 83.7%), 86.0% for breast cancer (OECD average 84.8%), 65.2% for cervical cancer, 64.8% for colon cancer (OECD average 62.1%), 62.3% for rectal cancer (OECD average 60.6%), 33.5% for stomach cancer (OECD average 29.7%), and 18.3% for lung cancer (OECD average 17.2%) (OECD, 2020d). Looking at these OECD averages, Germany's survival rate is higher, but in terms of the selected neighbouring countries and the three cancers featured in Figure 7.6, Germany ranges in the middle. It is worth noting

FIGURE 7.6 Cancer survival rates for breast cancer (among women), colon cancer and leukaemia (among children) in Germany and selected countries, 2000–2004, 2005–2009, and 2010–2014



Source: CONCORD-3-Study, Allemani et al., 2018

that the survival rate in the period 2010–2014 has increased for breast cancer, is stable for colon cancer, but decreased for childhood leukaemia compared to the period 2005–2009.

Among the comparator countries used in this report, Germany does not always perform as well in terms of avoiding the occurrence of cancer through preventive measures. The results of an international survey report a breast cancer screening rate of 49.4% in Germany (in 2017) for women aged between 50 and 69 years, compared to the selected countries Denmark (83.2% in 2018), the Netherlands (77.0% in 2018) and France (50.2% in 2018) (OECD, 2020d), and also below the EU28 average of 61% (Eurostat, 2020a). However, according to a national survey, 74.2% of women between 50 and 69 years reported that they had attended a mammography as a breast cancer screening within the previous two years (Robert Koch-Institut (RKI), 2017). The screening rate for cervical cancer was 80.4% in Germany in 2017, which was substantially higher than the EU22 average of 65.9%, but lower than in Austria (86.6%). In contrast, France (75.4%), Denmark (63.5%) and the Netherlands (56.9%) had lower figures than Germany (OECD, 2020d; Eurostat, 2020a).

The age-standardized mortality rate for breast cancer (among women) is 28.8 per 100 000 women (in 2017) while the rate for colorectal cancer (men and women) is 20.5 per 100 000 population. Both rates have decreased continually, down from 34.3 for breast cancer in 2000 (-16.3%) and down from 32.5 for colorectal cancer in 2000 (-6.2%). Nevertheless, for breast cancer Germany's mortality rate is higher than those in Switzerland (25.4 in 2016),

Austria (25.5 in 2017), France (27.4 in 2016) and the Netherlands (28.3 in 2017). For colorectal cancer, Germany's rate is higher than in Switzerland (16.8 in 2016) and Austria (19.3 in 2017), but lower than in France (20.9 in 2016) and the Netherlands (24.8 in 2017).

7.4.4 *Patient safety*

Patient safety refers to the absence of adverse events, i.e. incidents during treatment that could harm the patient (Schrappe, 2018). According to the Agency for Healthcare Research and Quality (AHRQ), Patient Safety Indicators (PSIs) aim to identify potentially avoidable safety events in order to improve health care, such as potential in-hospital complications and adverse events following surgeries, procedures and childbirth. The OECD uses a number of PSIs to measure the results of different health services (Drösler et al., 2012). In Germany the rates of postoperative pulmonary embolism (PE) or deep vein thrombosis (DVT) were 340 (PE) and 419 (DVT) per 100 000 hospital discharges, which are both above the OECD average of 267 (PE) and 260 (DVT) in 2017. The rate for a foreign body left in during a procedure was 6.3 per 100 000 hospital discharges in 2017, higher than the OECD average (5.2) but lower than the rates in the selected countries Switzerland (12.3 in 2015) and the Netherlands (7.2 in 2016). The rate for health care-associated infections (and the proportion of bacteria isolated from these infections resistant to antibiotics) is 3.1% (18.4% resistant infections), which is below the OECD average of 4.9%. For the indicator "obstetric trauma, vaginal delivery with instruments", the German figure of 6.0% was higher than the OECD average of 5.5% and the Netherlands (2.9%), but lower than Switzerland (7.4%) and Denmark (11.0%). For "obstetric trauma, vaginal delivery without instruments", Germany scored the same as the OECD average of 1.4%, but clearly lower than Switzerland (2.1%), the Netherlands (2.4%) and Denmark (3.0%).

7.4.5 *Overall quality of care*

The Association of the Scientific Medical Societies (*Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften e.V. – AWMF*) is a network

of 179 scientific medical societies in Germany, which is responsible for the publication, coordination and promotion of the development of clinical guidelines. The development of the clinical guidelines itself falls under the responsibility of the respective scientific medical society (Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften e.V. (AWMF), 2020). Jointly with the Federal Chamber of Physicians and the Federal Association of SHI Physicians, the AWMF publishes the "National Care Guidelines" (*Nationale Versorgungsleitlinien – NVL*), to promote quality in the treatment of e.g. asthma, COPD, diabetes and CHF (Ärztliches Zentrum für Qualität in der Medizin, 2019). Together with the German Cancer Aid and the German Cancer Society, the AWMF organizes the "Oncology Guidelines Programme" (*Leitlinienprogramm Onkologie – OL*) for the promotion of quality and transparency in the treatment of cancer (Deutsche Krebsgesellschaft e.V., 2020). Moreover, the integration of care between different health care providers and sectors is promoted by e.g. disease management programmes for chronic diseases and specific integrated care projects, which aim at enhancing the quality of care and promoting the continuity of care across different sectors (see Section 5.2 Patient pathways and see Box 5.4 on the integration of care).

Recent legislation, such as the Healthcare Strengthening Act (2015) and the Further Developing the Financial Structures and Quality in Statutory Health Insurance Act (2014), has aimed to improve the quality of health care and the transparency of care quality (see Section 6.1 Analysis of recent reforms). As part of these efforts, the Institute for Quality Assurance and Transparency in Healthcare (IQTIG) was founded in 2015, and is responsible for developing tools and indicators to secure quality in ambulatory and inpatient care and enhancing transparency, especially for patients, through e.g. publishing quality reports (see Section 2.7.2 Regulation and governance of provision). The IQTIG is also responsible for the development of patient surveys based on Patient-Reported Outcome Measures (PROM) and Patient-Reported Experience Measures (PREM), e.g. for the quality assurance procedure of percutaneous coronary intervention (PCI) and coronary angiography, and for schizophrenia. As the patient survey for PCI is supposed to start in 2021, first results are still awaited (Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG), 2018a, 2018b).

The patient perspective on the quality of hospital services has been assessed, for example, by the Bertelsmann Foundation. Satisfaction with

inpatient care varied among hospitals and ranged between 43.1% and 99.8% (average 79.3%) on the indicator "willingness to recommend to friends". Differences in hospital quality satisfaction rates were also identified between the states, ranging from 73.9% in Bremen to 82.0% in Saxony. Rating the quality of care was influenced by the patient's age and sex, by the hospital size and its workforce, and by the density of ambulatory care in the respective region (Bertelsmann Stiftung, 2018).

It goes without saying that the results of the different quality indicators presented cannot be used to assess a health service or health system as a whole. Nonetheless, they can provide an indication of how successful the provision of medical care is in certain parts of the service. Taking the example of Germany, there is, despite its high care capacities (or because of its overcapacities), room for improvement in the quality of treatment in certain areas.

7.5 Health system outcomes

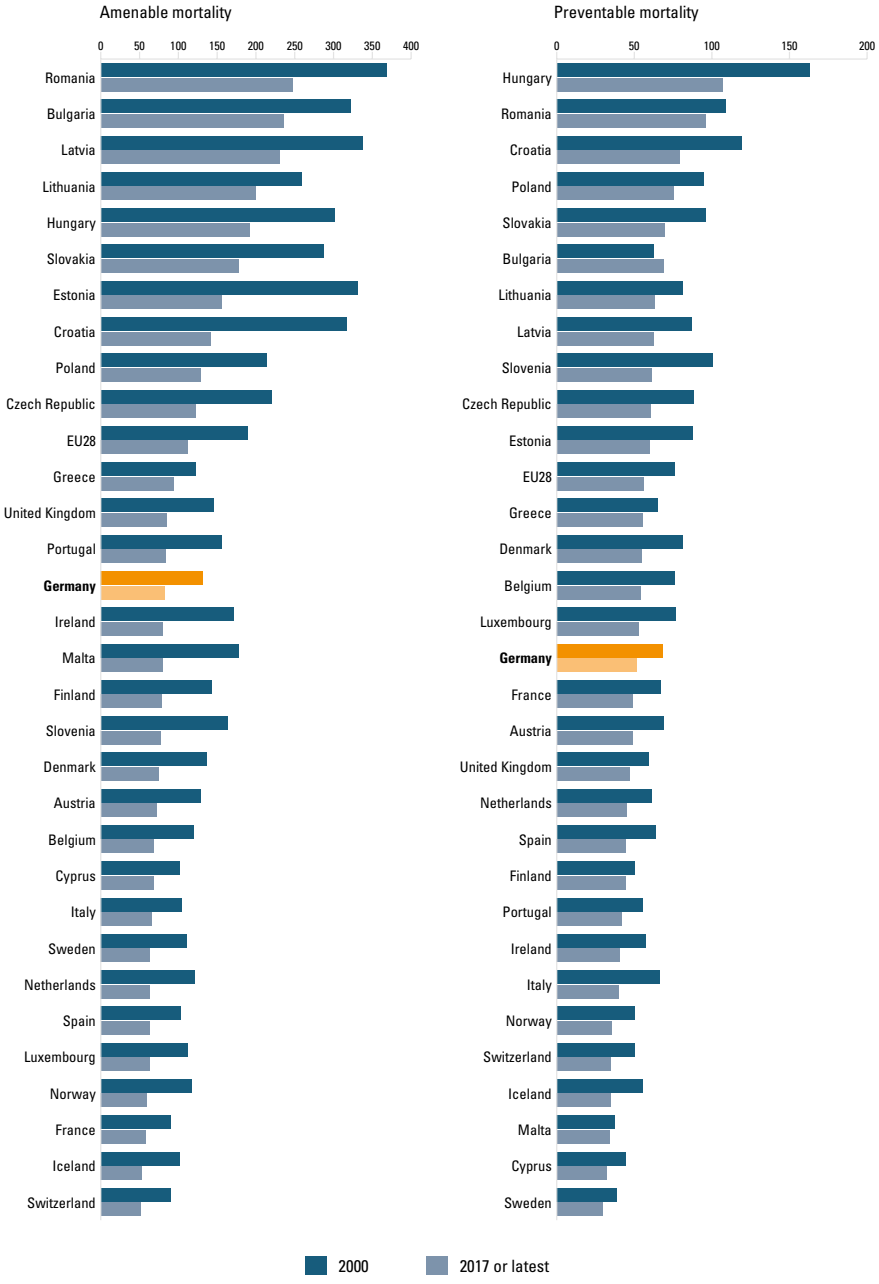
The health of the population is the ultimate goal of any health system. The health status of the German population is very good by international standards and has improved considerably over the last few decades (see Section 1.4 Health status). However, population health outcomes are largely influenced by social circumstances, level of education, individual lifestyles and harmful environmental factors. Unemployment, and other circumstances threatening impoverishment, the harmful effects of air pollution and noise, tobacco and alcohol consumption, as well as poor diet and a lack of exercise, being overweight, having high blood pressure and fat metabolism disorders all impair health. These determinants, which are of particular significance for patients with chronic conditions, also reveal numerous possibilities for preventive measures and health enhancement (Robert Koch-Institut (RKI), 2015a). Both positive and negative tendencies can be deduced from the various health determinants. While general living conditions have steadily improved in Germany on a par with population health, inequalities and poverty risks have generally increased over the last decade. The unemployed, welfare recipients, single parents and children growing up in a poverty environment have less favourable chances of being healthy (Robert Koch-Institut (RKI), 2015a) (see Section 1.4 Health status).

A measure to assess the contribution of health care to population health is the concept of "amenable mortality". Amenable mortality reflects premature deaths that should not occur in the presence of timely and effective health care. Based on the WHO mortality database, amenable mortality has declined in all EU countries since 2000, albeit to varying degrees. In Germany the amenable mortality rate decreased from 131.5 deaths per 100 000 population in 2000 to 81.8 deaths per 100 000 population in 2017 (Figure 7.7), but it still accounts for 23.3% of total mortality under the age of 75 and for both sexes combined (Eurostat, 2019). Amenable mortality in Germany is significantly lower than the EU average (122.4 deaths per 100 000 population), but higher than in the selected neighbouring countries Switzerland (50.9), France (57.3), the Netherlands (63.2), Austria (71.7) and Denmark (74.7) (Figure 7.7).

Another measure to assess health that may be attributed to the health system is the indicator "preventable mortality". This concept includes deaths which could have been avoided by public health interventions focusing on the wider determinants of public health, such as behaviour and lifestyle factors, socioeconomic status and environmental factors as well. In 2017 Germany could have prevented 51.3 deaths per 100 000 population through effective public health interventions, compared to 68.6 in 2000 (-25.2%). Again, Germany performs better than the EU average (56.1 per 100 000 population), but preventable mortality is higher than in the selected neighbouring countries Switzerland (34.9), the Netherlands (45.3), Austria (48.9) and France (49.9), and is only lower than in Denmark (54.5 per 100 000 population) (Figure 7.7).

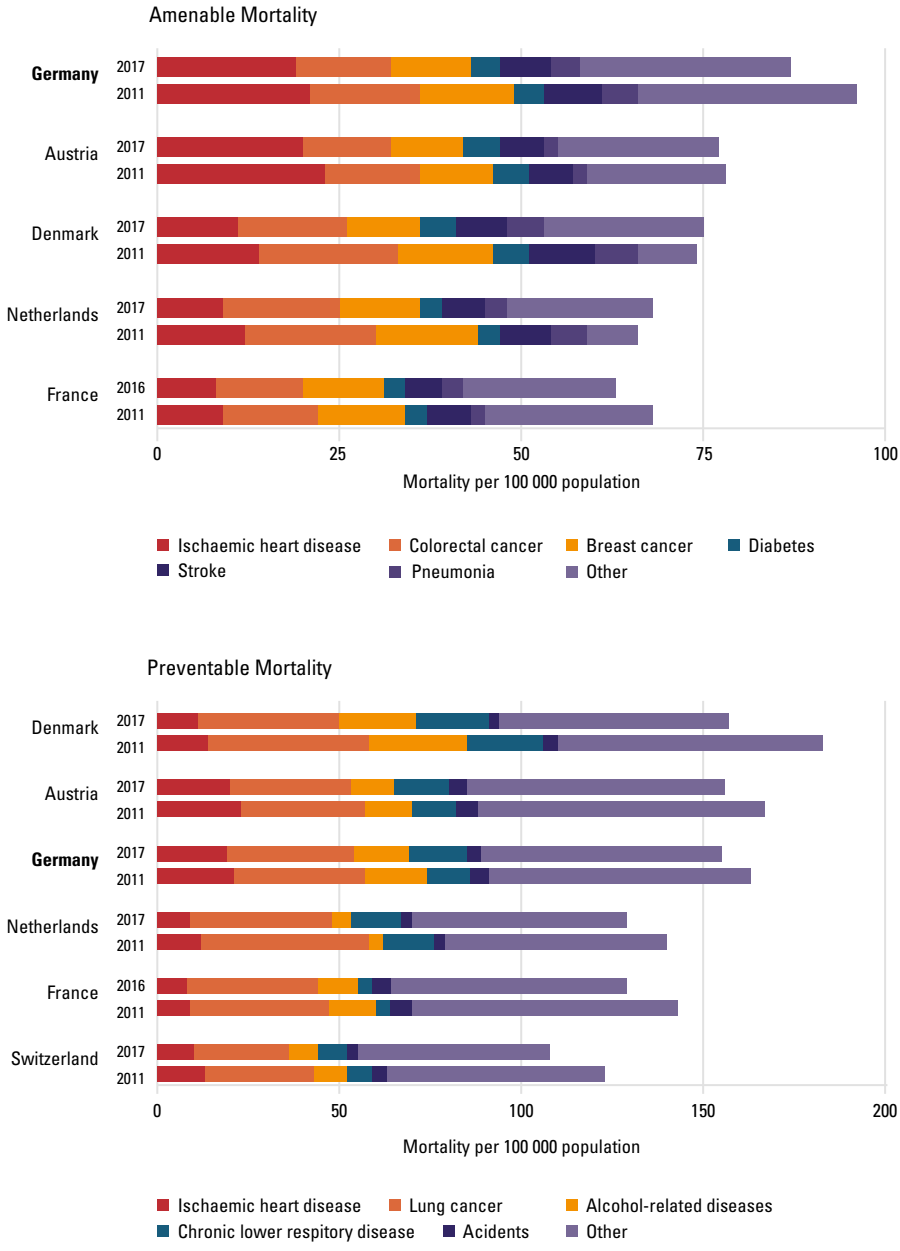
Eurostat data differ slightly from the WHO mortality database – due to differences in how amenable and preventable mortality are conceptualized – and are estimated at 154.8 preventable deaths per 100 000 population and 85.8 amenable deaths per 100 000 population in 2017. Compared to the selected neighbouring countries, Germany has the highest number of amenable deaths and the third highest preventable mortality rate in 2017 (Figure 7.8). Looking at the causes of amenable mortality, ischemic heart disease is the main driver in Germany, accounting for 22% of all amenable deaths in 2017 (18.9 per 100 000 population), followed by colorectal cancer (14.9% or 12.8 per 100 000 population), breast cancer (13.1% or 11.2 per 100 000 female population), stroke (7.9% or 6.8 per 100 000 population), pneumonia (4.6% or 4.0 per 100 000 population) and diabetes (4.4% or

FIGURE 7.7 Amenable and preventable mortality in Germany and European countries, 2000 and 2017 or latest available year



Sources: Population data from WHO detailed mortality files (released December 2018); amenable causes as per list by Nolte & McKee, 2004

FIGURE 7.8 Main causes of amenable and preventable mortality in Germany, 2011 and 2017 or latest available year



Source: Eurostat, 2020a

3.8 per 100 000 population) (Eurostat, 2020a). Lung cancer is the leading cause of preventable mortality in Germany. In 2017 there were 34.8 deaths per 100 000 population, making lung cancer responsible for 28.3% of all preventable deaths. Among the comparator countries, this rate is higher in France (35.7 per 100 000 population), Denmark (38.6 per 100 000 population) and the Netherlands (39.1 per 100 000 population). Ischemic heart disease, which causes both amenable and preventable mortality, is the second leading cause (22% or 18.9 per 100 000 population), followed by alcohol-related diseases (9.8% or 15.2 per 100 000 population), and chronic lower respiratory diseases (10.5% or 16.2 per 100 000 population) (Figure 7.8).

Since 2011 amenable and preventable mortality rates for both sexes have decreased for every cause; however, some causes show a considerable gender gap: while the share of women dying from ischemic heart disease is 11.5% (8.5 per 100 000 population), it is almost three times as high among men, at just above 30% (30 per 100 000 population). Furthermore, when looking at the trend in mortality due to lung cancer, a decrease is only seen among men by 9.2% from 50.4 to 45.8 per 100 000 population, while the rate among women has actually increased by 10.6% from 22.7 to 25.1 per 100 000 population. The difference in these two trends can be traced back to the fact that women's smoking behaviour changed significantly in the 1970s, and today's rising mortality rates for women due to lung cancer are the historical legacy of the higher smoking rates in previous decades (see Section 1.4 Health status).

The extent to which changes in amenable mortality are due to health care or health policy factors is difficult to determine. Regarding treatable diseases, the introduction of Disease Management Programmes (DMPs) is certainly worth mentioning. In 2002 DMPs were introduced initially for diabetes and a year later for breast cancer and later also for asthma/COPD and coronary heart disease. The aim was to increase the quality of chronic disease care, based on the provision of coordinated and structured care, following clinical guidelines, and by strengthening the patients' self-care competencies in order to control the course of the disease and reduce mortality (see Sections 5.2 Patient pathways and 5.3 Primary care). Although individual DMPs show a positive effect on process indicators, such as improved coordination and patient involvement, there are no studies on the effectiveness of DMPs that can establish a causal link to health outcomes (Fuchs et al., 2014).

With regard to preventable deaths, smoking is a major contributor to preventable mortality. Smoking rates have decreased among adults and adolescents over the past decade, but are still higher than in many other EU countries (OECD/European Observatory on Health Systems and Policies, 2019). Germany lags behind other countries with regard to tobacco regulations: after Bulgaria recently banned billboard advertising for tobacco products, Germany is now the only EU country where billboard advertising is still allowed. Furthermore, measures to prevent people from smoking in public places vary between states, ranging from weak regulations to full smoking bans in all public institutions. A new challenge is the use of e-cigarettes and shisha pipes which have become more popular, particularly among young people.

7.6 Health system efficiency

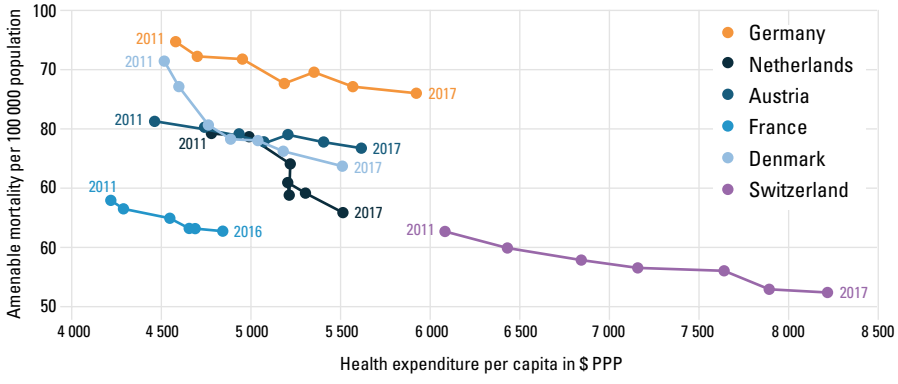
Germany spends a substantial amount of its wealth on health. Total expenditure on health amounted to 11.7% of GDP in 2018 according to data of the Federal Statistical Office. According to WHO data, per capita health expenditure more than doubled between 2000 and 2018, from US$ 2687 (adjusted for differences in purchasing power) to US$ 6098, which ranks Germany third in comparison to other WHO Europe countries in 2018 (after Switzerland and Norway) (World Health Organization Regional Office for Europe, 2020) (see Section 3.1 Health expenditure). By OECD data, health expenditure in Germany as a share of GDP was the fourth highest share among OECD countries (after the United States, Switzerland and Norway) and per capita spending was way above the OECD36 average of US$ 3994 in 2018 (OECD, 2019).

Per capita expenditure on health in Germany rose by an average of 2.5% per annum in real terms between 2013 and 2018 (up from 2.1% p.a. between 2008 and 2013). In comparison to other OECD countries, this was a relatively large increase during this period, and higher than in the Netherlands (0.5%), France (0.8%), Austria (1.0%), Switzerland (2.1%) and the OECD36 average (2.4%). According to OECD calculations, average per capita health expenditure growth is projected at 1.9% a year between 2015 and 2030, which would reflect a moderate increase compared to other OECD countries (OECD, 2019). The pace of health expenditure growth is partly attributable

to the comparatively large human, technical and infrastructural resources in the German health care system and a high level of activity (e.g. in terms of consultations, hospital cases, consumption of pharmaceuticals). In addition, the full implementation of reforms to the long-term care insurance (LTCI) scheme, such as the broadening of eligibility criteria and benefits, and a rapidly ageing population, represent additional pressures on the sustainability of financing (see Section 5.8 Long-term care).

One attempt to provide a very cursory illustration of how the health system is performing in terms of input costs and outcomes is to plot current expenditure on health against the amenable mortality rate. Although we must be mindful that it is not possible to effectively disentangle the role of health behaviours and other determinants of the health care system in influencing the level of amenable mortality, Figure 7.9 provides a useful entry point for discussion. Germany's amenable mortality rate has been falling continuously, but it has remained higher than in neighbouring countries throughout the years 2011–2017; at the same time, the country recorded the second highest health expenditure level in 2017, after Switzerland (Figure 7.9). The results suggest that the other countries have been able to secure better outcomes on this metric at lower cost (except for Switzerland, whose health expenditure far exceeds that of all the other countries).

FIGURE 7.9 Amenable mortality per 100 000 population versus health expenditure per capita, Germany and selected countries, 2011–2017



Sources: Eurostat, 2020a; World Health Organization, 2020b

Note: PPP = purchasing power parity

7.6.1 *Allocative efficiency*

Allocative efficiency indicates the extent to which an appropriate mix of services or interventions are purchased to maximize population health outcomes. In Germany the allocation of resources at the federal level mostly reflects the bargaining process between corporatist bodies, rather than a restrictive budget plan. Although there are mechanisms in place to secure the (cost-)effectiveness of benefits covered under SHI using tools such as Health Technology Assessment (see Section 2.7 Regulation), there is no priority setting by e.g. formulating goals. Pooled resources are reallocated among the sickness funds according to a morbidity-based risk-adjustment scheme, by which sickness funds have to cover all costs (see Section 3.3 Overview of the statutory financing system). However, the details of care provision and reimbursement are consequently negotiated between corporatist bodies and are not guided by an overarching strategic programme at the national level (instead, budgets are determined by historic spending levels).

International comparisons of health expenditure by function show that Germany spent 27.2% on curative and rehabilitative care in inpatient and day care settings in 2018, which is higher than in the Netherlands (24.4%), Denmark (25.1%) and Switzerland (25.3%), but lower than the EU average (30%), France (31.5%) and Austria (33.3%) (OECD, 2020b). In more detail, Germany spent € 1169 per inhabitant on hospital care in 2018 (up from € 691 in 2000), € 428 on inpatient long-term care (up from € 211 in 2000) and € 122 on preventive and rehabilitative institutions (up from € 92 in 2000).

Germany spent considerably less on ambulatory care than other EU countries. For instance, France (27.2%), Austria (29%), the Netherlands (29.2%), Switzerland (33.4%) and Denmark (34.9%) spent a higher share of health expenditure on ambulatory care, and the EU average is 31.4% (OECD, 2020b). In 2018, € 662 was spent per inhabitant for ambulatory care practices (up from € 383 in 2000), € 330 for dental care practices (up from € 227), € 257 for ambulatory long-term care (up from € 83) and € 206 on other allied health professionals (up from € 73).

Pharmaceuticals and medical devices accounted for another 13.7% of current health expenditures in 2018 (the fourth highest), according to the Federal Statistical Office. OECD data give a higher estimation for this category, with pharmaceuticals and medical devices representing the third highest budget item (19.3%). Under this data source, comparative

countries like France (18.4%), Austria (168%), Switzerland (14.8%) and the Netherlands (11.5%) spent less on pharmaceuticals than Germany, while Denmark (10%) recorded almost half of the German costs (OECD, 2020b).

Besides these considerations at the macro level, there are regional differences, which may imply some inefficiencies in the allocation of resources. On the input side, Germany registered 431 practising physicians and 1322 nurses per 1000 population in 2018, which is a considerable resource compared to other countries (see Figure 4.2 Human resources). However, there is a shortage of qualified personnel in some rural areas, in both the ambulatory and hospital sectors, despite the marked over-supply of physicians in many urban areas. For instance, the city state of Hamburg recorded the highest density of medical professionals at 76.5 per 1000 population and Brandenburg the lowest at 58.4. There are also regional variations in term of health expenditures, measured both in terms of per capita spending (ranging between € 4858 in Brandenburg and € 4008 in Bremen) and as a share of state GDP (ranging from 6.9% in Hamburg to 17.3% in Mecklenburg-Pomerania) (Arbeitsgruppe Gesundheitsökonomische Gesamtrechnungen der Länder im Auftrag der Statistischen Ämter der Länder, 2019).

7.6.2 *Technical efficiency*

Technical efficiency – securing a minimum level of inputs to a given set of outputs or unit costs for services – is complex to assess. While it is beyond the scope of this review to examine the precise relationship between inputs and outputs in the production of Germany's health services, we highlight here some aspects of technical efficiency that are relevant to the health system's performance. At a very general level, it is clear that in terms of the quantity of services provided, Germany's health system ensures a high level of care for almost the entire population. If we only consider activity of the health system, e.g. in terms of number of hospital days, number of performed inpatient procedures, number of diagnostic procedures and the number of ambulatory consultations as outputs of the health system, the overall activity level is outstanding and higher than (or comparable to) neighbouring countries for each indicator. Set against the inputs to the health system, e.g. human resources, and health expenditure, this suggests an overall good level

of technical efficiency. However, a high level of activity in a health system alone is not a marker of technical efficiency.

In terms of hospital care, although the costs per inhabitant for hospitals rose by more than 60% between 2000 and 2018, overall the number of hospital beds was reduced by 12% in the same period and stood at 602 acute care beds per 100 000 population in 2017. Average length of stay stood at 7.3 days and has fallen continuously since 2000, and at a higher pace (25%) than the corresponding reduction in beds (12%). It is noteworthy that the increase in hospital-related costs is mainly driven by an increase in the number of hospital cases (by 15% between 2000 and 2018, see Section 5.4.3 Inpatient care), while costs per case in relation to GDP have remained constant. To be precise, there were close to 19 million discharges from inpatient care (or 2.55 discharges per 10 population) – a level of activity that was above every other EU country in 2018 except for Bulgaria (Statistisches Bundesamt, 2020g; OECD, 2020b). National and international data are missing for a more detailed analysis of volumes, prices of hospital interventions and people seeking hospital care. However, by international comparison, Germany reports a significantly higher activity level for common surgical procedures (e.g. hip and knee replacement and hysterectomy) (Papanicolas et al., 2018).

Looking in more detail at hospital expenditure, a third of per capita hospital costs were associated with medical services (up from 27% in 2000), while services by the nursing workforce accounted for 27% (down from 31% in 2000), and pharmaceuticals and medical devices for 19.8% (up from 17.5%) (GBE-Bund, 2020g). Securing a sustainable nursing workforce has been at the centre of recent reform initiatives (see Section 4.2.4 Training of health workers). In 2015 (latest available data) 87% of surveyed nursing professionals reported that staffing levels where they worked were inadequate, a fact that is also reflected in the patient-to-nursing professional ratio: Germany recorded an average of 10.5 patients per nursing professional, higher than in the Netherlands and Switzerland, where the ratio is 5:1. During night shifts one nursing professional takes care of up to 20 patients, which indicates an implicit rationing of nursing activities which can have adverse effects on quality of care (Zander & Busse, 2017).

Ambulatory surgeries, such as cataract surgeries, are considered to be an indicator of performing activities in lower-cost settings, with subsequent savings. In 2017, 82.8% of cataract surgeries in Germany were performed in ambulatory care settings (up from 78.8% in 2007); by way of comparison, in

the Netherlands and Denmark nearly all cataract surgeries were performed in ambulatory settings, while in France the figure was 93.6% and Austria 84.5%. For tonsillectomy, there are very large differences in the approach taken by the comparator countries considered here. For example, only 4.3% of these surgeries were performed in ambulatory settings in Germany, significantly below the Netherlands (68.4%), Denmark (54.4%), the OECD average (34.1%) and France (29.9%), but higher than in Austria (0.5%).

The consumption of pharmaceuticals is another area for potential efficiency savings, with a considerable challenge being to address overuse. Measured in DDD, only those people with SHI insurance consumed 41.4 billion DDDs in 2018, an increase of almost 60% since 2004 (Röttger et al., 2019). Among these, over 80% of DDD were generics (88% according to national data and 82% according to OECD data), while only 2.7 billion DDD were patented pharmaceuticals (see Section 5.6 Pharmaceutical care). While Germany has one of the highest shares of generics (in terms of volume) in the reimbursed pharmaceutical market among EU and OECD countries, and the overall consumption of patented pharmaceuticals has decreased, related expenditure for the latter class of medicines has increased significantly, and stood at 0.6% of GDP in 2017 (Röttger et al., 2019) (see also Box 5.6).

8

Conclusions

Germany is internationally known as the first country to introduce statutory health insurance financed by social security contributions, in 1883. Even today, the "Bismarckian" SHI system is still considered one of the prototypes of modern health insurance systems. The principle of solidarity and the extensive self-governmental organization of actors are characteristics of the German health care system that have remained largely unchanged in the 137 years since its foundation.

The German health care system is often regarded as one of the best health care systems in the world, offering its population universal health insurance coverage and a comprehensive benefits basket with comparably low cost-sharing requirements. It provides good access to care with free choice of provider and short waiting times, which is partly due to good infrastructure with a dense network of ambulatory care physicians and hospitals, and a quantitatively high level of service provision. On the other hand, it is an expensive system with the highest per capita spending in the EU in 2018. In relation to overall health expenditure and available resources, a very high number of services are provided across sectors, particularly in hospital and ambulatory care. This can be seen as achieving a considerable level of technical efficiency. Given the high volumes, however, there are questions about the oversupply of services, as well as some comparatively moderate health and quality outcomes; from this perspective, there are signs that there is room for improvement in how the system allocates resources.

Additional challenges in the German health system may be identified in: (1) the strong separation of ambulatory and inpatient care in terms of organization and payment, which tends to hinder the coordination and

continuity of patient treatment; (2) the coexistence of SHI and substitutive PHI, which weakens the principle of solidarity; and (3) a complex stewardship framework which promotes incrementalism and makes it more difficult to implement reforms.

Several initiatives over the last twenty years have aimed to address these drawbacks. These range from the implementation of integrated care models and the development of eHealth infrastructure, as well as mechanisms for a better coordination of care across sectors. Moreover, in terms of quality assurance there has been progress: the IQTIG was founded in 2015 specifically to develop cross-sectoral quality indicators, all with the aim of improving the quality of care and to link health and quality outcomes with the planning and payment of service providers. With respect to the coexistence of SHI and substitutive PHI, the boundaries between the different insurance schemes are still strict, despite initiatives to make these more permeable (but only with regard to civil servants). An indirect measure of solidarity between SHI and PHI is the tax-based federal subsidy to the SHI system, since income taxes are also paid by those insured under PHI. In addition, an important development, aimed at avoiding inequities between SHI and substitutive PHI patients in accessing health care providers, is the establishment of a commission to harmonize the payment of physicians in the ambulatory sector, so that existing financial incentives no longer lead to the preferential treatment of substitutive PHI patients.

The third issue – complex stewardship – is listed as a health system challenge principally because it is a reason for the slow pace of reforms. While it is true that the frequency of legislative changes relating to health care is extraordinarily high in Germany, in most cases this activity is focused on incremental changes and implementation within individual sectors rather than landmark reforms, e.g. guided by national health goals or priority setting in the health system. The lack of an overarching policy vision, combined with the high number of stakeholders in a fragmented health system, makes it difficult for decision-makers to define measurable and operationalized national health targets, which in turn makes it hard to assess the performance of the German health care system systematically and to take subsequent actions. Overall, this approach to policy-making responds well to individual regulatory and administrative problems, and day-to-day management, but does not result in fundamental reforms breaking with historically grown structures and resulting difficulties. Thus, self-governance – with the Federal Joint Committee as

the supreme body – ensures good policy capacity in terms of well-founded decisions and institutionalized knowledge of actors in a number of fields. But at the same time the stakeholder structure and negotiation-by-committee tend to generate decisions that reflect the priorities of sickness funds and providers, and not necessarily the interests of patients or the general public. Moreover, a common governance challenge for all federalist states is the constant battle for competencies between the federal level and the states. When conflicts arise, this constellation can block reforms or lead to suboptimal results. Common guiding principles and objectives that transcend the political divisions between the federal government, the states and the various organs of self-government – and which can underpin an overarching vision of health system priorities and desired outcomes – seem to be necessary in order to ensure sustainable health care in Germany in the future.

9

Appendices

9.1 References

AG Psychiatrie der AOLG (2007). Psychiatrie in Deutschland. Strukturen-Leistungen-Perspektiven. Available at: https://www.gmkonline.de/beschluesse_oeffentl/Protokoll_80-GMK_Top1002_Anlage1_Psychiatrie-Bericht.pdf (accessed 08.05.2020).

AG Psychiatrie der AOLG (2017). Weiterentwicklung der psychiatrischen Versorgungsstrukturen in Deutschland Bestandsaufnahme und Perspektiven. Available at: https://www.gmkonline.de/beschluesse_oeffentl/90-GMK-Beschluss-Anlage-TOP-10-2.pdf (accessed 08.05.2020).

Alber J (1992). Das Gesundheitswesen der Bundesrepublik Deutschland. Entwicklung, Struktur und Funktionsweise. Frankfurt/Main: Campus-Verlag.

Allemani C, Matsuda T, Di Carlo V, Harewood R, Matz M, Nikšić M, et al. (2018). Global surveillance of trends in cancer survival 2000–14 (CONCORD-3). Analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries. *The Lancet* 391(10125):1023–75. DOI: 10.1016/S0140-6736(17)33326-3.

Arah OA, Westert GP, Hurst J, Klazinga NS (2006). A conceptual framework for the OECD Health Care Quality Indicators Project. *International journal for quality in health care: journal of the International Society for Quality in Health Care* 18(Suppl. 1):5–13. DOI: 10.1093/intqhc/mzl024.

Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften e.V. (AWMF) (2020). Leitlinien. Available at: https://www.awmf.org/leitlinien.html (accessed 15.12.2020).

Arbeitsgruppe Gesundheitsökonomische Gesamtrechnungen der Länder im Auftrag der Statistischen Ämter der Länder (2019). Gesundheitsökonomische Gesamtrechnungen der Länder. Gesundheitspersonalrechnung, Gesundheitsausgabenrechnung, Wertschöpfungs-Erwerbstätigen-Ansatz. Fürth. Available at: http://www.statistikportal.de/sites/default/files/2020-03/GGRdL_GVÖ_2019_mit%20Tabellenanhang.pdf (accessed 23.08.2020).

Ärztezeitung (2017). Ärzte faxen am liebsten. Available at: https://www.aerztezeitung.de/Kooperationen/Aerzte-faxen-am-liebsten-310948.html (accessed 02.04.2020).

Ärztliches Zentrum für Qualität in der Medizin (2019). NVL – Nationale VersorgungsLeitlinien – ÄZQ. Available at: https://www.leitlinien.de/nvl/ (accessed 21.08.2020).

Augurzky B, Beivers A (2019). Digitalisierung und Investitionsfinanzierung. Chapter 5. In collaboration with Jürgen Klauber. In: J Klauber, M Geraedts und J Friedrich (eds.).

Krankenhaus-Report 2019. Das digitale Krankenhaus, 67–81. Available at: https://link.springer.com/content/pdf/10.1007%2F978-3-662-58225-1.pdf (accessed 26.03.2020).

Augurzky B, Beivers A, Emde A, Halbe B, Pilny A, Straub N, et al. (2017). Stand und Weiterentwicklung der Investitionsförderung im Krankenhausbereich. Endbericht. Gutachten im Auftrag des Bundesministeriums für Gesundheit. Ed. by RWI – Leibniz-Institut für Wirtschaftsforschung. Essen. Available at: http://www.rwi-essen.de/media/content/pages/publikationen/rwi-projektberichte/rwi-pb_investitionsfoerderung_krankenhaus.pdf (accessed 26.03.2020).

BARMER (2020). Geschäftsbericht 2019. Miteinander Stark In Herausfordernden Zeiten. In collaboration with A Drougias, S Gieseke, A Hipp, I Oberhoff, R Janzen, C Rembecki and G Schäfer. Available at: https://www.barmer.de/blob/248614/61a6672c588273782061d9b5632e40ec/data/pdf-barmer-geschaeftsbericht-2019.pdf (accessed 03.09.2020).

BARMER Institut für Gesundheitssystemforschung (2020). Arztreport 2020. Psychotherapie – veränderter Zugang, verbesserte Versorgung? In collaboration with TG Grobe, S Steinmann and J Szecsenyi. Berlin (Schriftenreihe zur Gesundheitsanalyse, Band 21). Available at: https://www.barmer.de/blob/227512/4f989562e2da4b0fbc785f15ff011ebe/data/dl-arztreport2020-komplett.pdf (accessed 19.05.2020).

Bauer S, Römer K, Geiger L, Medizinischer Dienst des Spitzenverbandes Bund der Krankenkassen e.V. (MDS) (2019). Präventionsbericht 2019. Leistungen der gesetzlichen Krankenversicherung: Primärprävention und Gesundheitsförderung. Berichtsjahr 2018. Ed. by Medizinischer Dienst des Spitzenverbandes Bund der Krankenkassen e.V. (MDS) and GKV-Spitzenverband. Berlin. Available at: https://www.gkv-spitzenverband.de/media/dokumente/krankenversicherung_1/praevention__selbsthilfe__beratung/praevention/praeventionsbericht/2019_GKV_MDS_Praventionsbericht_barrierefrei.pdf (accessed 15.07.2020).

Baumann E, Czerwinski F (2015). Erst mal Doktor Google fragen? Nutzung Neuer Medien zur Information und zum Austausch über Gesundheitsthemen. In: J Böcken, B Braun and R Meierjürgen (eds.). Gesundheitsmonitor 2015. Bürgerorientierung im Gesundheitswesen; Kooperationsprojekt der Bertelsmann Stiftung und der BARMER GEK. Verlag Bertelsmann Stiftung, 57–79.

Becklas E, Mielck A, Böcken Jan (2012). Das Arzt-Patienten-Verhältnis in der ambulanten Versorgung - Unterschiede zwischen GKV- und PKV-Versicherten. In: J Böcken, B Braun and U Repschläger (eds.). Gesundheitsmonitor 2007. Gesundheitsversorgung und Gestaltungsoptionen aus der Perspektive von Bevölkerung und Ärzten: Verlag Bertelsmann Stiftung, 28–53.

Berger E, Hamers J, Backhaus R, Pype P, Boeckxstaens P, Pfirter L, et al. (eds.) (2020). Chapter 8. Long-term and palliative care at home: Skill-Mix innovations for enhanced responsiveness and satisfaction of patients and caregivers. In collaboration with Matthias Wismar & Claudia B. Maier. Volume II (Skill mix innovations in primary and chronic care: mobilising patients, peers, professionals).

Bertelsmann Stiftung (ed.) (2018). Hospital Quality from the Patient Perspective. Major regional differences in patient satisfaction (1). Available at: https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/VV_SG_KhQualitaet-aus-PatSicht_en.pdf (accessed 21.08.2020).

Björnberg A, Phang AY (2019). Euro Health Consumer Index 2018. Ed. by Health Consumer Powerhouse. Available at: https://healthpowerhouse.com/media/EHCI-2018/EHCI-2018-report.pdf (accessed 11.08.2020).

Blümel M, Fuchs S, Busse R (2012). Ressourcenverbrauch durch Verwaltung im deutschen Gesundheitssystem. Gutachten zur Vorlage bei der Bundesärztekammer. Ed. by Technische Universität Berlin. Berlin. Available at: https://www.bundesaerztekammer.de/fileadmin/user_upload/downloads/2012-03-15_BAEK_Ressourcenverbrauch_final.pdf (accessed 19.08.2020).

Bundesamt für Kartographie und Geodäsie (2020). Digitale Geodaten. Frankfurt/Main. Available at: https://gdz.bkg.bund.de/index.php/default/digitale-geodaten.html (accessed 29.09.2020).

Bundesamt für Migration und Flüchtlinge (2019). Migrationsbericht 2018: Zentrale Ergebnisse. Nürnberg. Available at: https://www.bmi.bund.de/SharedDocs/downloads/DE/publikationen/themen/migration/migrationsbericht-2018-kurzfassung.pdf (accessed 14.01.2020).

Bundesamt für Soziale Sicherung (2019). Mitteilung gemäß § 3 Abs. 3 KHSFV an das Bundesministerium für Gesundheit sowie an die Landesverbände der Krankenkassen und an die Ersatzkassen über die Verwaltung des Strukturfonds. (Stichtag 31. Dezember 2018). Köln. Available at: https://www.bundesamtsozialesicherung.de/fileadmin/redaktion/Strukturfonds/20190402Mitteilung____3_Abs._3_KHSFV_-_VerwStand_Ende_2018.pdf (accessed 24.03.2020).

Bundesamt für Soziale Sicherung (2020a). Disease Management Programme. Available at: https://www.bundesamtsozialesicherung.de/de/themen/krankenversicherung/disease-management-programme/dmp-grundlegende-informationen/ (accessed 19.07.2020).

Bundesamt für Soziale Sicherung (2020b). Träger der gesetzlichen Krankenversicherung, die der Aufsicht des BAS unterliegen. Available at: https://www.bundesamtsozialesicherung.de/de/themen/krankenversicherung/zahlen-und-statistiken/traeger-der-gesetzlichen-krankenkassen/ (accessed 12.03.2020).

Bundesärztekammer (2018). Ärztestatistik zum 31.12.2018. Available at: https://www.bundesaerztekammer.de/ueber-uns/aerztestatistik/aerztestatistik-2018/ (accessed 03.04.2020).

Bundesärztekammer (2019). Ergebnisse der Ärztestatistik zum 31. Dezember 2019. Berlin. Available at: https://www.bundesaerztekammer.de/ueber-uns/aerztestatistik/aerztestatistik-2019/ (accessed 28.08.2020).

Bundesärztekammer (2020a). Behandlungsfehler- Statistik. Available at: https://www.bundesaerztekammer.de/patienten/gutachterkommissionen-schlichtungsstellen/behandlungsfehler-statistik/ (accessed 03.09.2020).

Bundesärztekammer (2020b). Statistische Erhebung der Gutachterkommissionen und Schlichtungsstellen für das Statistikjahr 2019. Hannover. Available at: https://www.bundesaerztekammer.de/fileadmin/user_upload/downloads/pdf-Ordner/Behandlungsfehler/Statistische_Erhebung_2019.pdf (accessed 13.08.2020).

Bundesgesetzblatt (2009). Gesetz zur Einführung einer Modellklausel in die Berufsgesetze der Hebammen, Logopäden, Physiotherapeuten und Ergotherapeuten (64). Available at: http://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl109s3161.pdf (accessed 03.09.2020).

Bundesgesundheitsministerium (2019). Moderne Ausbildung für Psychotherapeuten. Available at: https://www.bundesgesundheitsministerium.de/psychotherapeutenausbildung.html (accessed 24.11.2020).

Bundesinstitut für Arzneimittel und Medizinprodukte (2020). Das Fast-Track-Verfahren für digitale Gesundheitsanwendungen (DiGA) nach § 139e SGB V. Ein Leitfaden für Hersteller, Leistungserbringer und Anwender. Available at: https://www.bfarm.de/SharedDocs/Downloads/DE/Service/Beratungsverfahren/DiGA-Leitfaden.pdf (accessed 24.06.2020).

Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR) (2019). Indikatoren und Karten zur Raum- und Stadtentwicklung. INKAR. Ausgabe 2019. Krankenhausbetten je 1000 Einwohner. Ed. by Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR). Bonn. Available at: https://www.inkar.de/ (accessed 23.03.2020).

Bundesministerium der Justiz und für Verbraucherschutz (2005). IFG - Gesetz zur Regelung des Zugangs zu Informationen des Bundes Available at: https://www.gesetze-im-internet.de/ifg/BJNR272200005.html (accessed 03.09.2020).

Bundesministerium des Innern, für Bau und Heimat (2019). Informationsfreiheitsgesetz. Available at: https://www.bmi.bund.de/DE/themen/moderne-verwaltung/open-government/informationsfreiheitsgesetz/informationsfreiheitsgesetz-node.html (accessed 03.09.2020).

Bundesministerium für Arbeit und Soziales (BMAS) (2017a). 5. Armuts und Reichtumsbericht der Bundesregierung. Available at: https://www.armuts-und-reichtumsbericht.de/SharedDocs/Downloads/Berichte/5-arb-langfassung.pdf (accessed 05.02.2020).

Bundesministerium für Arbeit und Soziales (BMAS) (2017b). Fortschrittsbericht 2017 zum Fachkräftekonzept der Bundesregierung. Available at: https://www.bmas.de/SharedDocs/Downloads/DE/PDF-Publikationen/a758-16-fortschrittsbericht-fachkraefte-fuer-2017.pdf (accessed 07.04.2020).

Bundesministerium für Arbeit und Soziales (BMAS) (2019). Arbeitsmedizinische Vorsorge. Available at: https://www.bmas.de/DE/Themen/Arbeitsschutz/Arbeitsmedizinische-Vorsorge/arbeitsmedizinische-vorsorge-artikel.html;jsessionid=307852AB9F494DF4DE3D682D195C9551 (accessed 25.05.2020).

Bundesministerium für Arbeit und Soziales (BMAS) (08.10.2019). Verordnung über maßgebende Rechengrößen der Sozialversicherung für 2020. Available at: https://www.bmas.de/SharedDocs/Downloads/DE/PDF-Meldungen/2018/verordnung-rechengroessen-2020.pdf (accessed 17.04.2020).

Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ) (2019). Charta der Rechte hilfe- und pflegebedürftiger Menschen. 13. Aufl. Available at: https://www.bmfsfj.de/blob/jump/93450/charta-der-rechte-hilfe-und-pflegebeduerftiger-menschen-data.pdf (accessed 24.01.2020).

Bundesministerium für Gesundheit (BMG) (2016). Kabinett beschließt Bericht zu Modellklauseln zur akademischen Erstausbildung von Hebammen, Logopäden, Physiotherapeuten und Ergotherapeuten. Available at: https://www.bundesgesundheitsministerium.de/presse/pressemitteilungen/2016/3-quartal-2016/modellvorhaben-gesundheitsberufe.html (accessed 04.04.2020).

Bundesministerium für Gesundheit (BMG) (2017a). Kurzzeitpflege. Available at: https://www.bundesgesundheitsministerium.de/kurzzeitpflege.html (accessed 07.05.2020).

Bundesministerium für Gesundheit (BMG) (2017b). Nationaler Krebsplan. Handlungsfelder, Ziele, Umsetzungsempfehlungen und Ergebnisse. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/N/Nationaler_Krebsplan/Informationspapier_Nationaler_Krebsplan.pdf (accessed 03.09.2020).

Bundesministerium für Gesundheit (BMG) (2018a). Beratung im Pflegefall. Available at: https://www.bundesgesundheitsministerium.de/themen/pflege/online-ratgeber-pflege/beratung-im-pflegefall.html (accessed 07.05.2020).

Bundesministerium für Gesundheit (BMG) (2018b). Vorsorge und Rehabilitation. Available at: https://www.bundesgesundheitsministerium.de/rehabilitation.html (accessed 24.04.2020).

Bundesministerium für Gesundheit (BMG) (2019a). Bundestag beschließt Masernschutzgesetz. Available at: https://www.bundesgesundheitsministerium.de/presse/pressemitteilungen/2019/4-quartal/masernschutzgesetz.html (accessed 27.05.2020).

Bundesministerium für Gesundheit (BMG) (2019b). Gesetz zur Stärkung der Vor-Ort-Apotheken. Available at: https://www.bundesgesundheitsministerium.de/apotheken.html (accessed 02.06.2020).

Bundesministerium für Gesundheit (BMG) (2019c). Gesetzes für mehr Sicherheit in der Arzneimittelversorgung (GSAV). Available at: https://www.bundesgesundheitsministerium.de/gsav.html (accessed 26.05.2020).

Bundesministerium für Gesundheit (BMG) (2019d). Gesetzliche Krankenversicherung. Gesetzliche Krankenversicherung Mitglieder, mitversicherte Angehörige und Krankenstand Jahresdurchschnitt 2018. Ergebnisse der GKV-Statistik KM1/13. BMG. Bonn. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Statistiken/GKV/Mitglieder_Versicherte/KM1_JD_2018.pdf (accessed 03.09.2020).

Bundesministerium für Gesundheit (BMG) (2019e). Medizinprodukte. Neue EU-Verordnungen. Available at: https://www.bundesgesundheitsministerium.de/themen/gesundheitswesen/medizinprodukte/neue-eu-verordnungen.html (accessed 11.03.2020).

Bundesministerium für Gesundheit (BMG) (2019f). Moderne Ausbildung für einen anspruchsvollen Beruf. Reform der Hebammenausbildung. Available at: https://www.bundesregierung.de/breg-de/aktuelles/hebammen-ausbildung-1611224 (accessed 05.04.2020).

Bundesministerium für Gesundheit (BMG) (2019g). Pflegegeld. Available at: https://www.bundesgesundheitsministerium.de/pflegegeld.html (accessed 07.05.2020).

Bundesministerium für Gesundheit (BMG) (2019h). Tagespflege und Nachtpflege. Available at: https://www.bundesgesundheitsministerium.de/tagespflege-und-nachtpflege.html (accessed 07.05.2020).

Bundesministerium für Gesundheit (BMG) (2019i). Urlaubsvertretung (Verhinderungspflege). Available at: https://www.bundesgesundheitsministerium.de/verhinderungspflege.html (accessed 07.05.2020).

Bundesministerium für Gesundheit (BMG) (2019j). Vereinbarkeit von Pflege und Beruf. Available at: https://www.bundesgesundheitsministerium.de/leistungen-der-pflege/vereinbarkeit-von-pflege-und-beruf.html (accessed 11.05.2020).

Bundesministerium für Gesundheit (BMG) (2019k). Wissenschaftliche Evaluation der Umstellung des Verfahrens zur Feststellung der Pflegebedürftigkeit (§ 18c Abs. 2 SGB XI). Abschlussbericht: Allgemeine Befragungen (Los 2). In collaboration with Kantar. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/P/Pflegebeduerftigkeitsbegriff_Evaluierung/Abschlussbericht_Los_2_Evaluation_18c_SGB_XI.pdf (accessed 08.12.2020).

Bundesministerium für Gesundheit (BMG) (20.06.2019). Finanzreserven der Krankenkassen im 1. Quartal 2019 weiter bei rund 21 Milliarden Euro. Berlin Available at: https://www.bundesgesundheitsministerium.de/presse/pressemitteilungen/2019/2-quartal/finanzergebnisse-gkv-1q-2019.html (accessed 10.06.2020).

Bundesministerium für Gesundheit (BMG) (21.09.2019). Verordnung zur Änderung der Apothekenbetriebsordnung und der Arzneimittelpreisverordnung. *Bundesanzeiger* (36):1450. Available at: https://www.bgbl.de/xaver/bgbl/start.xav?startbk=Bundesanzeiger_BGBl&jumpTo=bgbl119s1450.pdf (accessed 03.09.2020).

Bundesministerium für Gesundheit (BMG) (2020a). A – Z Gesundheitsberufe. Available at: https://www.bundesgesundheitsministerium.de/themen/gesundheitswesen/gesundheitsberufe/gesundheitsberufe-allgemein.html (accessed 08.04.2020).

Bundesministerium für Gesundheit (BMG) (2020b). Drittes EU-Aktionsprogramm Gesundheit | BMG. Available at: https://www.bundesgesundheitsministerium.de/themen/internationale-gesundheitspolitik/europa/eu-aktionsprogramm-gesundheit.html (accessed 25.05.2020).

Bundesministerium für Gesundheit (BMG) (2020c). Eckpunkte der Bund-Länder-Arbeitsgruppe Gesamtkonzept Gesundheitsfachberufe. Available at: https://bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/G/Gesundheitsberufe/Eckpunkte_Gesamtkonzept_Gesundheitsfachberufe.pdf (accessed 08.04.2020).

Bundesministerium für Gesundheit (BMG) (2020d). EU-Ratspräsidentschaft 2020. Spahn: „Wir müssen uns als EU mehr trauen und mehr zutrauen". Available at: https://www.bundesgesundheitsministerium.de/ministerium/meldungen/2020/eu-ratspraesidentschaft-pk.html (accessed 24.06.2020).

Bundesministerium für Gesundheit (BMG) (2020e). Finanzentwicklung der sozialen Pflegeversicherung. Available at: https://www.bundesgesundheitsministerium.de/themen/pflege/pflegeversicherung-zahlen-und-fakten.html (accessed 03.09.2020).

Bundesministerium für Gesundheit (BMG) (2020f). Gesetzliche Krankenversicherung. Endgültige Rechnungsergebnisse 2019. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Statistiken/GKV/Finanzergebnisse/KJ1_2019_Internet.pdf (accessed 03.09.2020).

Bundesministerium für Gesundheit (BMG) (2020g). gesund.bund.de. Verlässliche Informationen für Ihre Gesundheit. Available at: https://gesund.bund.de/ (accessed 20.11.2020).

Bundesministerium für Gesundheit (BMG) (2020h). Honorarkommission für ambulante ärztliche Vergütung legt Empfehlungen vor. Available at: https://www.bundesgesundheitsministerium.de/bericht-komv.html, (accessed 25.05.2020).

Bundesministerium für Gesundheit (BMG) (2020i). Intensivpflege- und Rehabilitationsstärkungsgesetz. Available at: https://www.bundesgesundheitsministerium.de/intensivpflegegesetz.html (accessed 24.04.2020).

Bundesministerium für Gesundheit (BMG) (2020j). Kennzahlen der Gesetzlichen Krankenversicherung 2007 bis 2020. Available at: https://www.bundesgesundheitsministerium.

de/fileadmin/Dateien/3_Downloads/G/GKV/KF2020Bund_Maerz_2020.pdf (accessed 02.05.2020).

Bundesministerium für Gesundheit (BMG) (2020k). Mitglieder und Versicherte der Gesetzlichen Krankenversicherung (GKV). Available at https://www.bundesgesundheitsministerium.de/themen/krankenversicherung/zahlen-und-fakten-zur-krankenversicherung/mitglieder-und-versicherte.html (accessed 04.09.2020).

Bundesministerium für Gesundheit (BMG) (2020l). Referentenentwurf zur Reform der Notfallversorgung. Referentenentwurf des Bundesministeriums für Gesundheit Entwurf eines Gesetzes zur Reform der Notfallversorgung. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Gesetze_und_Verordnungen/GuV/N/Referentenentwurf_zur_Reform_der_Notfallversorgung.pdf (accessed 19.12.2020).

Bundesministerium für Gesundheit (BMG) (2020m). Reform der Notfallversorgung. Available at: https://www.bundesgesundheitsministerium.de/notfallversorgung.html (accessed 12.06.2020).

Bundesministerium für Gesundheit (BMG) (2020n). Zahlen und Fakten zur Pflegeversicherung. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/Statistiken/Pflegeversicherung/Zahlen_und_Fakten/Zahlen_und_Fakten_der_SPV_17.Februar_2020_barr.pdf (accessed 10.06.2020).

Bundesministerium für Gesundheit (BMG) (2020o). Zukunft der Gesundheitsfachberufe - Ausbildungen neu ordnen. Available at: https://www.bundesgesundheitsministerium.de/ministerium/meldungen/2020/gesamtkonzept-gesundheitsberufe.html (accessed 08.04.2020).

Bundesministerium für Gesundheit (BMG), Bundesministerium der Justiz (BMJ), Der Beauftragte der Bundesregierung für die Belange der Patientinnen und Patienten (2019). Ratgeber für Patientenrechte. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Praevention/Broschueren/Ratgeber_Patientenrechte_10-2019.pdf (accessed 17.01.2020).

Bundesministerium für Gesundheit (BMG), Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ), Bundesministerium für Arbeit und Soziales (BMAS) (2020). Konzertierte Aktion Pflege. Erster Bericht zum Stand der Umsetzung der Vereinbarungen der Arbeitsgruppen 1 bis 5. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Pflege/Berichte/2020-11-13_1._Bericht_zum_Stand_der_Umsetzung_der_KAP.PDF (accessed 16.11.2020).

Bundesministerium für Wirtschaft und Energie (BMWi) (2020). Pilotprojekt zur Ausbildung junger Menschen aus Vietnam zu Krankenpflegefachkräften. Available at: https://www.bmwi.de/Redaktion/DE/Artikel/Wirtschaft/pilotprojekt-zur-ausbildung-junger-menschen-aus-vietnam-zu-krankenpflegefachkraeften.html (accessed 07.04.2020).

Bundespsychotherapeutenkammer (BPtK) (2018). Ein Jahr nach der Reform der Psychotherapie-Richtlinie. Wartezeiten 2018. Berlin. Available at https://www.bptk.de/wp-content/uploads/2019/01/20180411_bptk_studie_wartezeiten_2018.pdf (accessed 08.05.2020).

Bundesverband der Arzneimittel-Hersteller (ed.) (2019). Der Arzneimittelmarkt in Deutschland – Zahlen und Fakten 2018. Available at www.bah-bonn.de//type=565&file=redakteur_filesystem/public/Bah_Zahlenbroschuer_042019_WEB.pdf (accessed 17.03.2020).

Bundesvereinigung Deutscher Apothekerverbände e.V. (2019). Die Apotheke: Zahlen Daten Fakten 2019. Available at: https://www.abda.de/fileadmin/user_upload/assets/ZDF/ZDF_2019/ABDA_ZDF_2019_Brosch.pdf (accessed 25.03.2020).

Bundesvereinigung Prävention und Gesundheitsförderung e.V. (BVPG) (2019). Aufgaben und Ziele. Available at: https://www.bvpraevention.de/cms/index.asp?inst=newbv&snr=12368, zuletzt aktualisiert am 18.02.2019 (accessed 03.09.2020).

Bundeszahnärztekammer (2020). Statistisches Jahrbuch 2018/2019. Available at: https://www.bzaek.de/ueber-uns/daten-und-zahlen.html (accessed 04.09.2020).

Bundeszahnärztekammer, Kassenzahnärztliche Bundesvereinigung (2020). Daten & Fakten 2020. Available at: https://www.bzaek.de/fileadmin/PDFs/df20/_Daten_Fakten_2020.pdf (accessed 03.04.2020).

Bundeszentrale für gesundheitliche Aufklärung (2020). Startseite. Available at: https://www.bzga.de/ (accessed 03.09.2020).

Burgdorf F, Sundmacher L (2014). Potentially avoidable hospital admissions in Germany: an analysis of factors influencing rates of ambulatory care sensitive hospitalizations. *Deutsches Arzteblatt international* 111(13):215–23. DOI: 10.3238/arztebl.2014.0215.

Busse R (2000). Germany. Health care systems in transition. In collaboration with Annette Riesberg and Anna Dixon. Copenhagen: European Observatory on Health Care Systems (Health care systems in transition). Available at: https://apps.who.int/iris/bitstream/handle/10665/108301/HiT-de-2000-eng.pdf (accessed 19.12.2020).

Busse R, Blümel M (2014). Germany: health system review. 16. Aufl. (Health Systems in Transition). Available at https://www.euro.who.int/__data/assets/pdf_file/0008/255932/HiT-Germany.pdf (accessed 19.12.2020).

Busse R, Blümel M, Knieps F, Bärnighausen T (2017a). Statutory health insurance in Germany: a health system shaped by 135 years of solidarity, self-governance, and competition. *The Lancet* (390):882–97. DOI: 10.1016/ S0140-6736(17)31280-1.

Busse R, Blümel M, Spranger A (2017b). Das deutsche Gesundheitssystem. Akteure, Daten, Analysen. 2. Auflage. Berlin: Medizinisch Wissenschaftliche Verlagsgesellschaft.

Busse R, Riesberg A (2004). Germany. Copenhagen: WHO Regional Office on behalf of the European Observatory of Health Systems and Policies (Health care systems in transition). Available at: https://apps.who.int/iris/bitstream/handle/10665/107630/HiT-6-9-2004-eng.pdf(acccessed04.09.2020).

Busse R, Riesberg A (2005). Gesundheitssysteme im Wandel. Kopenhagen. Available at: https://www.euro.who.int/__data/assets/pdf_file/0019/108460/E85472G.pdf (accessed 04.09.2020).

Carinci F, van Gool K, Mainz J, Veillard J, Pichora EC, Januel JM, et al. (2015). Towards actionable international comparisons of health system performance: expert revision of the OECD framework and quality indicators. *International journal for quality in health care: journal of the International Society for Quality in Health Care* 27(2):137–46. DOI: 10.1093/intqhc/mzv004.

Coca V, Nink K, Schröder H (2011). Ökonomische Aspekte des deutschen Arzneimittelmarktes 2010. In: Ulrich Schwabe und Dieter Paffrath (ed.). Arzneiverordnungs-Report 2011, Spring. Berlin, Heidelberg: Springer Berlin Heidelberg, 167–222.

Commonwealth Fund (2016). International Health Care Systems Profiles. Overall views of Health Care System. Available at: https://www.commonwealthfund.org/international-health-policy-center/system-stats#OverallViewsofHealthCareSystem (accessed 25.11.2020).

Council of the European Union (2020). 18-month Programme of the Council (1 July 2020–31 December 2021). REV 1. Brussels (8086/1/20). Available at: https://data.consilium.europa.eu/doc/document/ST-8086-2020-REV-1/en/pdf (accessed 30.06.2020).

Dasch B, Blum K, Gude P, Bausewein C (2015). Place of Death: Trends over the course of a Decade. A population-based study of death certificates from the years 2001 and 2011. *Deutsches Ärzteblatt International* 112(29-30):496–504. DOI: 10.3238/arztebl.2015.0496.

Deutsche Angestellten Krankenkasse (DAK) (2020). Versicherte zum Stichtag 01.01.2020, 08.09.2020. Private Email.

Deutsche Fachkräfteagentur für Gesundheits- und Pflegeberufe (DeFa) (2020). Handeln statt verhandeln – weil Pflege Menschlichkeit braucht! Available at: https://www.defa-agentur.de/ (accessed 07.04.2020).

Deutsche Gesellschaft für Infektiologie e.V. (2018). S3- Leitlinie Strategien zur Sicherung rationaler Antibiotika-Anwendung im Krankenhaus. Ed. by AWMF. Available at: https://www.awmf.org/uploads/tx_szleitlinien/092-001l_S3_Strategien-zur-Sicherung-rationaler-Antibiotika-Anwendung-im-Krankenhaus_2020-02.pdf (accessed 02.06.2020).

Deutsche Krankenhausgesellschaft (2019). Bestandsaufnahme zur Krankenhausplanung und Investitionsfinanzierung in den Bundesländern. In collaboration with Dezernat II – Krankenhausfinanzierung und -planung. Available at: https://www.dkgev.de/fileadmin/default/Mediapool/1_DKG/1.7_Presse/1.7.1_Pressemitteilungen/2019/2019-12-19_

Anhang_DKG_Bestandsaufnahme_KH-Planung_Investitionsfinanzierung.pdf (accessed 23.03.2020).
Deutsche Krankenhausgesellschaft; GKV-Spitzenverband; PKV-Spitzenverband (2019). Gemeinsamer Bericht zur Einführung eines pauschalierenden Entgeltsystems für psychiatrische und psychosomatische Einrichtungen gemäß § 17d Absatz 4 Satz 8 KHG. Available at: https://www.gkv-spitzenverband.de/media/dokumente/krankenversicherung_1/krankenhaeuser/psychiatrie/pepp_bericht_2019/2019_06_28_PEPP-Bericht_17d_KHG_DKG_GKV_PKV.pdf (accessed 10.06.2020).
Deutsche Krebsgesellschaft e.V. (2020). Leitlinienprogramm Onkologie. Available at: https://www.leitlinienprogramm-onkologie.de/home/ (accessed 21.08.2020).
Deutsche Rentenversicherung (2019). Rentenversicherung in Zahlen 2019. Available at: https://www.deutsche-rentenversicherung.de/SharedDocs/Downloads/DE/Statistiken-und-Berichte/statistikpublikationen/rv_in_zahlen_2019.pdf (accessed 19.12.2020).
Deutsche Rentenversicherung (2020). Warum Reha? – Zuzahlung. Available at: https://www.deutsche-rentenversicherung.de/DRV/DE/Reha/Warum-Reha/zuzahlung.html (accessed 21.04.2020).
Deutscher Bundestag (2009). Koalitionsvertrag zwischen CDU/CSU und FDP. Wachstum. Bildung. Zusammenhalt. 17. Legislaturperiode. Available at: https://www.cdu.de/system/tdf/media/dokumente/091026-koalitionsvertrag-cducsu-fdp_0.pdf (accessed 10.06.2020).
Deutscher Bundestag (2013). Koalitionsvertrag zwischen CDU, CSU und SPD. Deutschlands Zukunft gestalten. 18. Legislaturperiode. Available at: https://www.bundestag.de/resource/blob/194886/696f36f795961df200fb27fb6803d83e/koalitionsvertrag-data.pdf (accessed 10.06.2020).
Deutscher Bundestag (2014). Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Harald Weinberg, Sabine Zimmermann und weiterer Abgeordneten. Menschen ohne Krankenversicherungsschutz und das Beitragsschuldengesetz. Drucksache 18/2969. Available at: http://dip21.bundestag.de/dip21/btd/18/029/1802969.pdf (accessed 10.06.2020).
Deutscher Bundestag (2018a). Ausbildung in der Altenpflege. Schulgeldfreiheit. Available at: https://www.bundestag.de/resource/blob/579864/a0cd5bf9023c46175e4aeee276b55685/WD-9-077-18-pdf-data.pdf (accessed 19.12.2020).
Deutscher Bundestag (2018b). Koalitionsvertrag zwischen CDU, CSU und SPD. Ein neuer Aufbruch für Europa-Eine neue Dynamik für Deutschland -Ein neuer Zusammenhalt für unser Land. 19. Legislaturperiode. Available at: https://www.bundestag.de/resource/blob/543200/9f9f21a92a618c77aa330f00ed21e308/kw49_koalition_koalitionsvertrag-data.pdf (accessed 10.06.2020).
Deutscher Bundestag (2019). Parlament. Berlin. Available at: https://www.bundestag.de/parlament/fraktionen (accessed 16.01.2020).
Deutscher Bundestag (2020). Wahltermine in Deutschland. Berlin. Available at: https://www.bundestag.de/wahltermine (accessed 04.09.2020).
Deutscher Hausärzteverband (2020). Hausarztverträge. Available at: https://www.hausaerzteverband.de/themen/hausarztvertraege (accessed 19.07.2020).
Deutscher HebammenVerband e.V.: Akademisierung Available at: https://www.hebammenverband.de/beruf-hebamme/akademisierung/ (accessed 05.04.2020).
Deutscher Hospiz- und PalliativVerband e.V. (2016). Stationäre Hospize für Erwachsene, stationäre Hospize für Kinder, Jugendliche und junge Erwachsene sowie Palliativstationen in Deutschland. Daten zur Entwicklung und zum aktuellen Stand. Berlin. Available at: https://www.dhpv.de/tl_files/public/Service/statistik/20160411_Bericht_StatHospizePalliativ.pdf (accessed 17.06.2020).
Deutscher Hospiz- und PalliativVerband e.V. (2020a). DHPV Aktuell. Bundesweites Informationsmedium für alle in der Hospiz- und Palliativarbeit Tätigen, Available at: https://www.dhpv.de/dhpv-aktuell-online/item/dhpv-aktuell-nr-136.html (accessed 17.06.2020).
Deutscher Hospiz- und PalliativVerband e.V. (2020b). Zahlen und Fakten. Available at: https://www.dhpv.de/service_zahlen-fakten.html (accessed 22.09.2020).

Deutscher Verband für Physiotherapie (ZVK) e.V. (2020). Zahlen, Daten, Fakten zur Physiotherapie. Available at:https://www.physio-deutschland.de/fachkreise/beruf-und-bildung/zahlen-daten-fakten.html (accessed 22.09.2020).

Deutsches Ärzteblatt (2020a). Große regionale Unterschiede bei Wirtschaftlichkeitsprüfungen. Available at: https://www.aerzteblatt.de/nachrichten/113630/Grosse-regionale-Unterschiede-bei-Wirtschaftlichkeitspruefungen (accessed 26.06.2020).

Deutsches Ärzteblatt (2020b). Wirtschaftlichkeitsprüfung: Höhe der Regresszahlungen sinkt. Available at: https://www.aerzteblatt.de/archiv/214208/Wirtschaftlichkeitspruefung-Hoehe-der-Regresszahlungen-sinkt (accessed 26.06.2020).

Deutsches Kompetenzzentrum für internationale Fachkräfte in den Gesundheits- und Pflegeberufen (DKF) unter Trägerschaft des Kuratorium Deutsche Altershilfe (KDA) (2020). Startseite. Available at: https://dkf-kda.de/ (accessed 06.11.2020).

Deutsches Krankenhausinstitut (2019). Krankenhausbarometer. Umfrage 2018. In collaboration with KBlum, S Löffert, M Offermanns and P Steffen. Available at: https://www.dki.de/sites/default/files/2019-01/2018_11_kh_barometer_final.pdf (accessed 04.04.2020).

Deutsches Krebsforschungszentrum (2019). Krebsinformationsdienst. Available at: https://www.krebsinformationsdienst.de/ (accessed 03.09.2020).

Doty MM, Tikkanen R, Shah A, Schneider EC (2019). Primary Care Physicians' Role In Coordinating Medical And Health-Related Social Needs In Eleven Countries. *Health Affairs* 39(1):115–23. DOI: 10.1377/hlthaff.2019.01088.

Dragano N, Gerhardus A, Kurth B-M, Kurth T, Razum O, Stang A, et al. (2016). Public Health-mehr Gesundheit für alle Ziele setzen-Strukturen schaffen-Gesundheit verbessern. *Gesundheitswesen (Bundesverband der Arzte des Offentlichen Gesundheitsdienstes (Germany))* 78(11):686–8. DOI: 10.1055/s-0042-116192.

Drösler SE, Romano PS, Tancredi DJ, Klazinga NS (2012). International comparability of patient safety indicators in 15 OECD member countries: a methodological approach of adjustment by secondary diagnoses. *Health services research* 47(1 Pt 1):275–92. DOI: 10.1111/j.1475-6773.2011.01290.x.

European Centre for Disease Prevention and Control (2020). COVID-19 situation update for the EU/EEA and the UK, as of 23 June 2020. Available at: https://www.ecdc.europa.eu/en/cases-2019-ncov-eueea (accessed 24.06.2020).

European Commission (2019). VAT rates applied in the Member States of the European Union. Situation at 1st July 2019. Available at: https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/taxation/vat/how_vat_works/rates/vat_rates_en.pdf (accessed 17.03.2020).

European Commission (2020a). Digital Economy and Society Index DESI. 2020. Digital public services. Available at: https://ec.europa.eu/digital-single-market/en/digital-public-services-scoreboard (accessed 11.06.2020).

European Commission (2020b). EU Health Programme – Public Health. Available at: https://ec.europa.eu/health/funding/programme_en (accessed 25.05.2020).

European Commission (2020c). Country Report Germany 2020. Commission Staff Working Document (COM/2020/150 final). Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2020:0504:FIN:EN:PDF (accessed 11.06.2020).

European Commission (2020d). Recommendation for a Council Recommendation on the 2020 National Reform Programme of Germany and delivering a Council opinion on the 2020 Stability Programme of Germany (COM/2020/505 final). Available at: https://ec.europa.eu/info/sites/info/files/2020-european-semester-csr-comm-recommendation-germany_en.pdf (accessed 11.06.2020).

European Federation of Pharmaceutical Industries and Associations (2018). The Pharmaceutical Industry in Figures. Key Data 2018. Available at: https://www.efpia.eu/media/361960/efpia-pharmafigures2018_v07-hq.pdf (accessed 21.09.2020).

Eurostat (2019). Vermeidbare Todesfälle im Jahr 2016. Bei Menschen unter 75 Jahren hätten in der EU zwei von drei Todesfällen vermieden werden können. Herz-und Lungenkrankheiten bei vermeidbaren Todesfällen an erster Stelle. Pertrovova, N. Available at: https://ec.europa.

eu/eurostat/documents/2995521/10090953/3-05092019-AP-DE.pdf/8b5a713a-33c0-4ab5-a01e-991572212e1f (accessed 23.08.2020).
Eurostat (2020a). Database – Eurostat. European Commission, Luxembourg. Available at: https://ec.europa.eu/eurostat/en/data/database (accessed 15.07.2020).
Eurostat (2020b). Health personnel by NUTS 2 regions [hlth_rs_prsrg]. Available at: https://ec.europa.eu/eurostat/data/database (accessed 06.04.2020).
Eurostat (2020c). Hospital beds by type of care [hlth_rs_bds]. Available at: https://ec.europa.eu/eurostat/en/data/database (accessed 20.03.2020).
Eurostat (2020d). Long-term care beds in nursing and residential care facilities by NUTS 2 regions [hlth_rs_bdsns]. Available at: https://ec.europa.eu/eurostat/en/data/database (accessed 20.03.2020).
Eurostat (2020e). Medical technology. [hlth_rs_equip]. Available at: https://ec.europa.eu/eurostat/en/data/database (accessed 01.04.2020).
Eurostat (2020f). Migration and migrant population statistics – Statistics Explained. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Migration_and_migrant_population_statistics (accessed 07.04.2020).
Eurostat (2020g). Nursing and caring professionals [hlth_rs_prsns]. Available at: https://ec.europa.eu/eurostat/en/data/database (accessed 06.04.2020).
Fachverband Leitstellen e.V. (2014). BOS-Leitstellen. Available at: http://fachverband-leitstellen.de (accessed 17.06.2020).
Fischer F, Krämer A (ed.) (2016). eHealth in Deutschland. Anforderungen und Potenziale innovativer Versorgungsstrukturen. In collaboration with Krämer A. Fischer F. Berlin, Heidelberg: Springer Vieweg.
Fuchs S, Henschke C, Blümel M, Busse R (2014). Disease management programs for type 2 diabetes in Germany: a systematic literature review evaluating effectiveness. *Deutsches Ärzteblatt international* 111(26):453–63. DOI: 10.3238/arztebl.2014.0453.
GBE-Bund (2020a). Ärztinnen und Ärzte ausländische nach Tätigkeitsbereich. Kreisdiagramm – Bei den Ärztekammern registrierte ausländische Ärztinnen und Ärzte nach Tätigkeitsbereich. Available at: http://www.gbe-bund.de (accessed 07.04.2020).
GBE-Bund (2020b). Aus dem Krankenhaus entlassene vollstationäre Patientinnen und Patienten (einschließlich Sterbe- und Stundenfälle) nach pauschalierenden Entgelten für Psychiatrie und Psychosomatik (PEPP) (Anzahl und je 100.000 Einwohner). Gliederungsmerkmale: Jahre, Wohnort, Geschlecht, Strukturkategorie. Available at: https://www.gbe-bund.de (accessed 03.09.2020).
GBE-Bund (2020c). Bei den Ärztekammern registrierte Ärztinnen und Ärzte mit Gebiets- und Facharztbezeichnung (absolut, je 100.000 Einwohner und Einwohner je Arzt). Gliederungsmerkmale: Jahre, Region, Alter, Geschlecht, Gebiets-/Facharztbezeichnung, Tätigkeitsbereich. Available at: http://www.gbe-bund.de (accessed 19.05.2020).
GBE-Bund (2020d). Beschäftigte in Apotheken (Anzahl). Gliederungsmerkmale: Jahre, Region, Geschlecht, Berufsbezeichnung, Art der Apotheke. Available at: http://www.gbe-bund.de/ (accessed 06.04.2020).
GBE-Bund (2020e). Betten in Krankenhäusern und Vorsorge- oder Rehabilitationseinrichtungen 2017. Anzahl und je nach 100 000 Einwohner, Nutzungsgrad und Fallzahl je Bett. Available at: www.gbe-bund.de (accessed 18.05.2020).
GBE-Bund (2020f). Gesundheitspersonal (vorläufig) in 1.000. Gliederungsmerkmale: Jahre, Deutschland, Geschlecht, Einrichtung, Beruf. Available at: https://www.gbe-bund.de (accessed 03.09.2020).
GBE-Bund (2020g). Pflegeheime und verfügbare Plätze in Pflegeheimen. Available at: http://www.gbe-bund.de (accessed 10.06.2020).
GBE-Bund (2020h). Studenten in ausgewählten Studiengängen des Gesundheitswesens. Available at: http://www.gbe-bund.de (accessed 09.04.2020).
Gemeinsamer Bundesausschuss (2016). Richtlinie des Gemeinsamen Bundesausschusses über grundsätzliche Anforderungen an ein einrichtungsinternes Qualitätsmanagement für Vertragsärztinnen und Vertragsärzte, Vertragspsychotherapeutinnen und Vertragspsycho-

therapeuten, medizinische Versorgungszentren, Vertragszahnärztinnen und Vertragszahnärzte sowie zugelassene Krankenhäuser. (Qualitätsmanagement-Richtlinie/QM-RL).In :(BAnz AT 15.11.2016 B2. Available at: https://www.g-ba.de/richtlinien/87/ (accessed 17.01.2020).

Gemeinsamer Bundesausschuss (2017). Richtlinie des Gemeinsamen Bundesausschusses zur Jugendgesundheitsuntersuchung, Jugendgesundheitsuntersuchungs-Richtlinie. In: BAnz AT 12.10.2016 B4. Available at: https://www.g-ba.de/downloads/62-492-1270/RL-JUG_2016-07-21_iK-2017-01-01.pdf (accessed 14.07.2020).

Gemeinsamer Bundesausschuss (17.01.2019). Richtlinie des Gemeinsamen Bundesausschusses über die Früherkennungsuntersuchungen auf Zahn-, Mund- und Kieferkrankheiten (zahnärztliche Früherkennung gemäß § 26 Absatz 1 Satz 5 und Absatz 2 Satz 5 SGB V). FU-RL. In: BAnz AT 28.05.2019 B2.

Gemeinsamer Bundesausschuss (22.09.2019). Richtlinie des Gemeinsamen Bundesausschusses über die Durchführung der Psychotherapie, Psychotherapie-Richtlinie. In: BAnz AT 23.01.2020 B4. Available at: https://www.g-ba.de/downloads/62-492-2029/PT-RL_2019-11-22_iK-2020-01-24.pdf (accessed 08.05.2020).

Gemeinsamer Bundesausschuss (22.11.2019). Richtlinie des Gemeinsamen Bundesausschusses zu Auswahl, Umfang und Verfahren der Qualitätsprüfungen nach §135b Absatz 2 SGB V. (Qualitätsprüfungs-Richtlinie vertragszahnärztlicher Versorgung, QL-RL-Z). In: BAnz AT 19.02.2020 B2. Available at: https://www.g-ba.de/richtlinien/97/ (accessed 07.05.2020).

Gemeinsamer Bundesausschuss (06.12.2019). Richtlinie des Gemeinsamen Bundesausschusses zur Bestimmung der Befunde und der Regelversorgungsleistungen für die Festzuschüsse nach §§ 55,56 SGB V zu gewähren sind sowie über die Höhe der auf die Regelversorgungsleistungen entfallenden Beträge nach § 56 Absatz 4 SGB V, Festzuschuss- Richtlinie. In: BAnz AT 31.12.2019 B8.

Gemeinsamer Bundesausschuss (2020a). Krankentransport-Richtlinie. Available at: https://www.g-ba.de/richtlinien/25/ (accessed 18.06.2020).

Gemeinsamer Bundesausschuss (2020b). Rehabilitations-Richtlinie. Available at: https://www.g-ba.de/richtlinien/23/ (accessed 22.04.2020).

Gemeinsamer Bundesausschuss (2020c). Rehabilitations-Richtlinie: Anpassungen an das Pflegepersonal-Stärkungsgesetz. Available at: https://www.g-ba.de/beschluesse/4109/ (accessed 22.04.2020).

Gemeinsamer Bundesausschuss (2020d). Richtlinie des Gemeinsamen Bundesausschusses für organisierte Krebsfrüherkennungsprogramme, oKFE-RL. In: BAnz AT 18.10.2018 B3. Available at: https://www.g-ba.de/downloads/62-492-2001/oKFE-RL-2019-12-05-iK-2020-01-01.pdf (accessed 13.07.2020).

Gemeinsamer Bundesausschuss (2020e). Richtlinie des Gemeinsamen Bundesausschusses über die Früherkennung von Krankheiten bei Kindern, Kinder-Richtlinie, vom 18.06.2015. In: BAnz AT 18.08.2016 B1. Available at: https://www.g-ba.de/downloads/62-492-2156/Kinder-RL_2020-05-14_iK-2020-03-25.pdf (accessed 13.07.2020).

Gemeinsamer Bundesausschuss (2020f). Richtlinie des Gemeinsamen Bundesausschusses über die Früherkennung von Krebserkrankungen, KFE-RL. In: BAnz 2009, Nr. 148a. Available at: https://www.g-ba.de/downloads/62-492-2002/KFE-RL_2019-12-05_iK-2020-01-01.pdf (accessed 13.07.2020).

Gemeinsamer Bundesausschuss (2020g). Richtlinie des Gemeinsamen Bundesausschusses über die Gesundheitsuntersuchungen zur Früherkennung von Krankheiten, Gesundheitsuntersuchungs-Richtlinie. In: BAnz AT 06.03.2020 B2. Available at: https://www.g-ba.de/downloads/62-492-2058/GU-RL_2019-12-19_iK-2020-03-07.pdf (accessed 14.07.2020).

Gemeinsamer Bundesausschuss (2020h). Richtlinien des Gemeinsamen Bundesausschusses über die ärztliche Betreuung während der Schwangerschaft und nach der Entbindung, Mutterschafts-Richtlinien. In: BAnz AT 27.04.2020 B3. Available at: https://www.g-ba.de/downloads/62-492-2130/Mu-RL_2020-02-20_iK_2020-04-28.pdf (accessed 14.07.2020).

Gemeinsamer Bundesausschuss (01.06.2020). Richtlinie des Gemeinsamen Bundesausschusses zur Verordnung von spezialisierter ambulanter Palliativversorgung. SAPV-RL. In: BAnz AT 12.06.2020 B3.

Gericke CA, Dehn M, Wismar M, Busse R (2009). Cost-sharing in the German healthcare system: Effects of health reforms on efficiency and equity. *Journal of Management and Marketing in Healthcare* 2(4):410–26. DOI: org/10.1179/mmh.2009.2.4.410.

Gerlinger T (ed.) (2015). Selbstverwaltung in der Sozialversicherung – Ein Überblick. Unter Mitarbeit von Mülheims. Wiesbaden: Springer Fachmedien.

Geschäftsstelle des Bevollmächtigten der Bundesregierung für Pflege (2020). Leistungsdschungel in der häuslichen Pflege auflösen. Diskussionspapier zum Entlastungsbudget. Available at: https://www.pflegebevollmaechtigter.de/pressemitteilungen.html?file=files/upload/pdfs_allgemein/Diskussionspapier_Entlastungsbudget.pdf (accessed 04.05.2020).

Gesundes Kinzigtal (2020). Gesundes Kinzigtal – Gemeinsam aktiv fuer Ihre Gesundheit. Available at: https://www.gesundes-kinzigtal.de (accessed 04.06.2020).

Gesundheit für Billstedt und Horn (2018). Weil ich gesund sein will – für mich und meine Familie. Mein Gesundheitsnetzwerk in Billstedt/Horn. Available at: https://gesundheit-bh.de (accessed 04.06.2020).

Gesundheitsministerkonferenz (2016). TOP: 4.1 Perspektiven zur Stärkung des Öffentlichen Gesundheitsdienstes. Beschlüsse der 89. GMK. Available at: https://www.gmkonline.de/Beschluesse.html?id=416&jahr=2016 (accessed 17.07.2020).

Gesundheitsministerkonferenz (2018a). Leitfaden der Gesundheitsministerkonferenz. Available at: https://www.gmkonline.de/documents/leitfaden-gmk_1560410006.pdf (accessed 22.09.2020).

Gesundheitsministerkonferenz (2018b). TOP: 10.22 Personalbedarf und Vergütung von Ärztinnen und Ärzten im Öffentlichen Gesundheitsdienst (ÖGD). Beschlüsse der 91. GMK. Available at: https://www.gmkonline.de/Beschluesse.html?id=731&jahr=2018 (accessed 17.07.2020).

gesundheitsziele.de (2017). Gesundheit rund um die Geburt (Nationales Gesundheitsziel). Available at: http://gesundheitsziele.de/ (accessed 13.11.2019).

GKV-Spitzenverband (2018). Bericht des GKV-Spitzenverbandes zur Palliativversorgung. Berlin. Available at: https://www.gkv-spitzenverband.de/media/dokumente/krankenversicherung_1/hospiz_palliativversorgung/20171208_Bericht_GKV-SV_Palliativversorgung.pdf (accessed 18.06.2020).

GKV-Spitzenverband (2019). Zusatzbeitragssatz. Available at: https://www.gkv-spitzenverband.de/krankenversicherung/kv_grundprinzipien/finanzierung/zusatzbeitragssatz/zusatzbeitragssatz.jsp (accessed 27.04.2020).

GKV-Spitzenverband (2020a). GKV-GAmSi – Startseite – GKV-GAmSi. Available at: https://www.gkv-gamsi.de (accessed 26.03.2020).

GKV-Spitzenverband (2020b). Krankenkassenliste. Available at: https://www.gkv-spitzenverband.de/krankenkassenliste.pdf (accessed 24.05.2020).

GKV-Spitzenverband, Deutsches Krankenhausinstitut, PKV-Spitzenverband (2009). Vereinbarung über die Einführung eines pauschalierten Entgeltsystems für psychiatrische und psychosomatische Einrichtungen gemäß § 17d KHG (Psych-Entgeltsystem). Available at: https://www.gkv-spitzenverband.de/media/dokumente/krankenversicherung_1/krankenhaeuser/psychiatrie/KH_2009_11_23_Grundlagenvereinbarung_Psych-Entgeltsystem.pdf (accessed 04.09.2020).

Gomes B, Calanzani N, Gysels M, Hall S, Higginson IJ (2013). Heterogeneity and changes in preferences for dying at home: a systematic review. *BMC Palliative Care* 12:7. DOI: 10.1186/1472-684X-12-7.

Heidemann C, Paprott R, Schmidt C, Reitzle L, Baumert J, Du Y, et al. (2019). Aufbau einer Diabetes-Surveillance in Deutschland – Ergebnisse der ersten Projektphase 2015–2019. *Epidemiologisches Bulletin* 45:273–8. DOI: 10.25646/6403.

Helmholtz Zentrum München (2019). Allergieinformationsdienst – Das Allergie-Portal. Available at: https://www.allergieinformationsdienst.de/ (accessed 31.10.2019).

Hollederer A (2015). Gesundheitskonferenzen in Deutschland: ein Überblick. *Gesundheitswesen (Bundesverband der Ärzte des Öffentlichen Gesundheitsdienstes (Germany))* 77(3):161–7. DOI: 10.1055/s-0033-1361109.

Huber J, Mielck A (2010). Morbidität und Gesundheitsversorgung bei GKV- und PKV-Versicherten. Forschungsstand empirischer Studien. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* 53(9):925–38. DOI: 10.1007/s00103-010-1119-7.

IGES Institut (2018). Patientenlotsen. Available at: https://www.iges.com/kunden/gesundheit/forschungsergebnisse/2018/patientenlotsen/index_ger.html (accessed 04.09.2020).

IGES Institut (2019). Stationäre Hebammenversorgung. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Gesundheit/Berichte/stationaere_Hebammenversorgung_IGES-Gutachten.pdf (accessed 03.04.2020).

Industrie- und Handelskammer Karlsruhe (2020). Einzelhandel mit freiverkäuflichen Arzneimitteln. Available at: https://www.karlsruhe.ihk.de/services/sachundfachkundepruefungen/freiarz-2449404 (accessed 24.03.2020).

Institut für das Entgeltsystem im Krankenhaus GmbH (InEK) (2020). Investitionsbewertungsrelationen 2020. Siegburg. Available at: https://www.g-drg.de/Investitionsbewertungsrelationen_IBR/Investitionsbewertungsrelationen_IBR_2020 (accessed 24.03.2020).

Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG) (2018a). Entwicklung von Patientenbefragungen im Rahmen des Qualitätssicherungsverfahrens Perkutane Koronarintervention und Koronarangiographie. Würdigung der Stellungnahmen zum Zwischenbericht. Available at: https://iqtig.org/downloads/berichte/2018/IQTIG_Patientenbefragung_QS-PCI_Wuerdigung-der-Stellungnahmen_2018-12-15_barrierefrei.pdf (accessed 21.08.2020).

Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG) (2018b). Methodische Grundlagen Version 1.1s. Entwurf für das Stellungnahmeverfahren. Online available at: https://iqtig.org/dateien/dasiqtig/grundlagen/IQTIG_Methodische-Grundlagen- (accessed 21.08.2020).

Institut für Qualität und Transparenz im Gesundheitswesen (IQTIG) (2019). Qualitätsreport 2019. Available at: https://iqtig.org/downloads/berichte/2018/IQTIG_Qualitaetsreport-2019_2019-09-25.pdf (accessed 04.09.2020).

Institute for Health Metrics and Evaluation (IHME) (2017). Global Health Data Exchange.

Institute for Health Metrics and Evaluation (IHME) (2018). Institute for Health Metrics and Evaluation. Measuring what matters. Available at: http://www.healthdata.org (accessed 26.02.2020).

Karagiannidis C, Mostert C, Hentschker C, Voshaar T, Malzahn J, Schillinger G, et al. (2020). Case characteristics, resource use, and outcomes of 10 021 patients with COVID-19 admitted to 920 German hospitals: an observational study. *The Lancet Respiratory Medicine* 8(9):853–62. DOI: 10.1016/S2213-2600(20)30316-7.

Kassenärztliche Bundesvereinigung (KBV) (2014). Bundesarztregister. Archiv der Tabellenbände ab 2013. Available at: https://www.kbv.de/html/bundesarztregister.php (accessed 08.05.2020).

Kassenärztliche Bundesvereinigung (KBV) (2018). Versorgungsgrade in den Planungsbereichen. Available at: https://gesundheitsdaten.kbv.de/cms/html/17016.php (accessed 19.07.2020).

Kassenärztliche Bundesvereinigung (KBV) (2019a). Patientenrechte. Available at: https://www.kbv.de/html/patientenrechte.php (accessed 29.10.2019).

Kassenärztliche Bundesvereinigung (KBV) (2019b). Region. Available at: https://gesundheitsdaten.kbv.de/cms/html/16402.php (accessed 29.09.2020).

Kassenärztliche Bundesvereinigung (KBV) (2019c). Weiterbildungsförderung. Available at: https://www.kbv.de/html/themen_2861.php (accessed 08.04.2020).

Kassenärztliche Bundesvereinigung (KBV) (2019d). Statistische Informationen aus dem Bundesarztregister. Bundesgebiet insgesamt Stand: 31.12.2019. Berlin. Available at: https://www.kbv.de/media/sp/2019-12-31_BAR_Statistik.pdf (accessed 08.05.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020a). Ärztemangel. Available at: https://www.kbv.de/html/themen_1076.php (accessed 06.04.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020b). Mehr Sicherheit bei der Arzneimitteltherapie. Available at: https://www.kbv.de/media/sp/PraxisWissen_Mehr_Sicherheit_bei_der_Arzneimitteltherapie.pdf (accessed 26.05.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020c). Notfallversorgung. Available at: https://www.kbv.de/html/notfallversorgung.php (accessed 14.06.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020d). SAPV-spezifische Betriebsstättennummer für SAPV-Teams nach KV-Region. Stand: 12.04.2019. Available at:https://gesundheitsdaten.kbv.de/cms/html/17067.php (accessed 18.06.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020e). Wirtschaftlichkeitsprüfung. Available at: https://www.kbv.de/html/2949.php (accessed 26.06.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020f). Versichertenbefragung der Kassenärztlichen Bundesvereinigung 2020. Available at: https://www.kbv.de/media/sp/Tabellenband_Ergebnisse_KBV_Versichertenbefragung.pdf (accessed 11.08.2020).

Kassenärztliche Bundesvereinigung (KBV) (2020g). Ärztlicher Bereitschaftsdienst. Available at: https://www.kbv.de/html/aerztlicher_bereitschaftsdienst.php (accessed 19.12.2020).

Kassenärztliche Bundesvereinigung (KBV), GKV-Spitzenverband (2019). Rahmenvorgaben nach § 84 Abs. 6 SGB V – Arzneimittel – für das Jahr 2020. Available at: https://www.gkv-spitzenverband.de/media/dokumente/krankenversicherung_1/arzneimittel/rahmenvertraege/vertragsaerzte/Rahmenvorgaben_nach_84_Abs_6_SGB_V_Arzneimittel_fuer_das_Jahr_2020_vom_30_September_2019.pdf (accessed 26.06.2020).

Kassenzahnärztliche Bundesvereinigung (KZBV) (2019). Patientenberatung. Available at: https://www.kzbv.de/patientenberatung.1069.de.html (accessed 29.10.2019).

Kassenzahnärztliche Bundesvereinigung (KZBV), GKV-Spitzenverband (2020). Bundesmantelvertrag – Zahnärzte. Available at: https://www.kzbv.de/bundesmantelvertrag.1223.de.html (accessed 29.04.2020).

Klauber J, Geraedts M, Friedrich J (eds.) (2015). Krankenhaus-Report 2015. Strukturwandel. Stuttgart: Schattauer-Verlag.

Klein J, Knesebeck O (2016). Soziale Unterschiede in der ambulanten und stationären Versorgung: Ein Überblick über aktuelle Befunde aus Deutschland. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz* 59(2):238–44. DOI: 10.1007/s00103-015-2283-6.

Knauthe K, Deindl C (2019). Altersarmut von Frauen durch häusliche Pflege. Gutachten im Auftrag des Sozialverband Deutschland e. V. Ed. by. Sozialverband Deutschland. Available at: https://www.sovd.de/fileadmin/downloads/pdf/sonstiges/SoVD_Gutachten_Altersarmut_Frauen2019.pdf (accessed 19.12.2020).

Knieps F, Reiners H (2015). Gesundheitsreformen in Deutschland. Geschichte-Intentionen-Kontroversen. 1. Auflage. Bern: Verlag Hans Huber.

Kraemer L (2016). Ausländische Beschäftigte im Gesundheitswesen nach Herkunftsländern. Kurzstudie. Ed.. by Prognos AG. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/A/Auslaendische_Beschaeftigte/Bericht_Auslaendische_Fachkraefte_Gesundheitswesen.pdf (accessed 19.12.2020).

Lampert T, Hoebel J, Kroll LE (2019). Soziale Unterschiede in der Mortalität und Lebenserwartung in Deutschland – Aktuelle Situation und Trends. *Journal of Health Monitoring* 4(1):3–14. DOI: 10.25646/5868.

Lampert T, Horch K, List S, Ryl L, Saß A-C, Starker A, et al. (2010). Gesundheitsberichterstattung des Bundes: Ziele, Aufgaben und Nutzungsmöglichkeiten. Ed. by Robert Koch-Institut (01). Available at: https://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GBEDownloadsK/2010_1_Ziele_Aufgaben.pdf?__blob=publicationFile (accessed 27.11.2019).

Lange C, Finger JD (2017). Gesundheitsverhalten in Europa – Vergleich ausgewählter Indikatoren für Deutschland und die Europäische Union. *Journal of Health Monitoring* 2(2).

Lewers D, Geraedts M (2015). Erreichbarkeit von Organkrebszentren: Existiert bereits ein flächendeckendes Angebot in Deutschland? [Accessibility of Organ Cancer Centres: Is there already Nationwide Coverage in Germany?] *Gesundheitswesen (Bundesverband der*

Ärzte des Öffentlichen Gesundheitsdienstes (Germany)) 77(01):24–30. DOI: 10.1055/s-0033-1364018.

Lüngen M, Potthoff P, Wendland G (2005). Unterschiede in der Inanspruchnahme von Gesundheitsleistungen und der Morbidität zwischen Versicherten in der Gesetzlichen Krankenversicherung und Privaten Krankenversicherung. Eine Auswertung des Infratest Access Panels. *Gesundheits- und Sozialpolitik* 59:25–30.

Lüngen M, Stollenwerk B, Messner P, Lauterbach KW, Gerber A (2008). Waiting times for elective treatments according to insurance status: A randomized empirical study in Germany. *International Journal for Equity in Health* 7(1):1. DOI: 10.1186/1475-9276-7-1.

Luque Ramos A, Hoffmann F, Spreckelsen O (2018). Waiting times in primary care depending on insurance scheme in Germany. *BMC Health Services Research* 18(1):191. DOI: 10.1186/s12913-018-3000-6.

Lüschen G, Niemann S, Apelt P (1997). The integration of two health systems: Social stratification, work and health in East and West Germany. *Social Science & Medicine* 44(6):883–99. DOI: 10.1016/S0277-9536(96)00193-1.

Marstedt G (2018). Das Internet: Auch Ihr Ratgeber für Gesundheitsfragen? Bevölkerungsumfrage zur Suche von Gesundheitsinformationen im Internet und zur Reaktion der Ärzte. DOI: 10.11586/2017052.

Medizinischer Dienst des Spitzenverbandes Bund der Krankenkassen e.V. (MDS) (2019). IGeL Monitor – Startseite. Available at: https://www.igel-monitor.de (accessed 31.10.2019).

Melching H (2015). Palliativversorgung. Modul 2 Strukturen und regionale Unterschiede in der Hospiz-und Palliativversorgung. Bertelsmann Stiftung (Faktencheck Gesundheit). Available at: https://faktencheck-gesundheit.de/de/publikationen/publikation/did/faktencheck-palliativversorgung-modul-2/index.html (accessed 17.06.2020).

Merkel A (2020). Regierungserklärung von Bundeskanzlerin Merkel vor dem Deutschen Bundestag, 18.06.2020. Available at: r https://www.bundeskanzlerin.de/bkin-de/aktuelles/regierungserklaerung-von-bundeskanzlerin-merkel-1746554 (accessed 18.06.2020).

Mielck A, Helmert U (2006). Vergleich zwischen GKV-und PKV-Versicherten: Unterschiede bei Morbidität und gesundheitlicher Versorgung. *Gesundheitsmonitor*, 32–52.

Nationale Präventionskonferenz (2019). Erster Präventionsbericht nach § 20d Abs. 4 SGB V. Hg. v. GKV-Spitzenverband, Deutsche Gesetzliche Unfallversicherung e. V. Spitzenverband, Sozialversicherung für Landwirtschaft, Forsten und Gartenbau, Deutsche Rentenversicherung Bund und Verband der privaten Krankenversicherung. Available at: https://www.npk-info.de/fileadmin/user_upload/ueber_die_npk/downloads/2_praeventionsbericht/NPK-Praeventionsbericht_Barrierefrei.pdf (accessed 03.09.2020).

Neumann M, Bensing J, Wirtz M, Wübker A, Scheffer C, Tauschel D, et al. (2011). The impact of financial incentives on physician empathy: a study from the perspective of patients with private and statutory health insurance. *Patient education and counseling* 84(2):208–16. DOI: 10.1016/j.pec.2010.07.012.

Nimptsch U, Mansky T (2014). Stroke unit care and trends of in-hospital mortality for stroke in Germany 2005–2010. *International journal of stroke: official journal of the International Stroke Society* 9(3):260–5. DOI: 10.1111/ijs.12193.

Nolte E, McKee M (2004). Does health care save lives? Avoidable mortality revisited. London: Nuffield Trust.

O'Donnell O, van Doorslaer E, Wagstaff A, Lindelow M (2012). Analyzing Health Equity Using Household Survey Data. A Guide to Techniques and Their Implementation. Washington, DC: World Bank. Available at: http://hdl.handle.net/10986/6896 (accessed 19.12.2020).

OECD (2018). Health Care Quality and Outcomes (HCQO) 2018–19 Indicator definitions. Available at: http://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf (accessed 19.08.2020).

OECD (2019). Health at a Glance 2019. OECD Indicators. Paris. Available at: http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm (accessed 19.12.2020).

OECD (2020a). Earnings and wages – Average wages – OECD Data. Available at: https://data.oecd.org/earnwage/average-wages.htm (accessed 20.05.2020).

OECD (2020b). Health at a Glance: Europe 2020. Available at: https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe_23056088 (accessed 24.11.2020).
OECD (2020c). Health Care Quality Indicators Project. Conceptual Framework Paper (OECD Health Working Papers). Available at: https://www.oecd-ilibrary.org/social-issues-migration-health/health-care-quality-indicators-project_440134737301 (accessed 18.08.2020).
OECD (2020d). OECD Statistics. Paris. Available at: https://stats.oecd.org/ (accessed 03.04.2020).
OECD/European Observatory on Health Systems and Policies (2017). Germany: Country Health Profile 2017, State of Health in the EU. OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels. Available at: https://www.oecd.org/germany/germany-country-health-profile-2017-9789264283398-en.htm (accessed 04.09.2020).
OECD/European Observatory on Health Systems and Policies (2019). Germany: Country Health Profile 2019 (State of Health in the EU). Available at: https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_de_english.pdf (accessed 04.02.2020).
OECD/Eurostat/WHO (2017). Classification of Health Care Providers (ICHA-HP). Part I Chapter 6. In: OECD/Eurostat/WHO (eds.). A System of Health Accounts 2011. Revised edition. Paris: OECD Publishing, 121–52. Available at: https://www.oecd-ilibrary.org/docserver/9789264270985-8-en.pdf (accessed 23.03.2020).
Ognyanova D, Busse R (2011). A destination and a source: Germany manages regional health workforce disparities with foreign medical doctors. In: Matthias Wismar (ed.). Health Professional Mobility and Health Systems. Evidence from 17 European Countries. Geneva: World Health Organization, 211–41.
Osborn R, Schneider E (2015). 2015 Commonwealth Fund International Health Policy Survey of Primary Care Physicians. Survey Chartpack. Commonwealth Fund, 2015. Available at: https://www.commonwealthfund.org/publications/surveys/2015/dec/2015-commonwealth-fund-international-survey-primary-care-physicians (accessed 17.08.2020).
Osborn R, Squires D (2016). Commonwealth Fund 2016 International Health Policy Survey of Adults in 11 Countries. Survey Chartpack. Washington, DC. Available at: https://www.commonwealthfund.org/publications/surveys/2016/nov/2016-commonwealth-fund-international-health-policy-survey-adults (accessed 17.08.2020).
Osborn R, Squires D, Doty MM, Sarnak DO, Schneider EC (2016). In New Survey of Eleven Countries, US Adults Still Struggle With Access To And Affordability Of Health Care. *Health affairs (Project Hope)* 35(12):2327–36. DOI: 10.1377/hlthaff.2016.1088.
Panteli D, Arickx F, Cleemput I, Dedet G, Eckhardt H, Fogarty E, et al. (2016). Pharmaceutical regulation in 15 European countries review. In: *Health systems in transition* 18(5):1–122.
Panteli D, Röttger J, Nimptsch U, Busse R (2019). Internationale Datengrundlagen für die Versorgungsforschung – Impulse für Deutschland. November 2019.
Papanicolas I, Woskie LR, Jha AK (2018). Health Care Spending in the United States and Other High-Income Countries. *JAMA* 319(10):1024–39. DOI: 10.1001/jama.2018.1150.
PD – Berater der öffentlichen Hand, Lohfert & Lohfert AG, Technische Universität Berlin (2019). Gutachten Krankenhauslandschaft Nordrhein-Westfalen. Ed. by. PD – Berater der öffentlichen Hand GmbH. Available at: https://broschueren.nordrheinwestfalendirekt.de/herunterladen/der/datei/gutachten-krankenhauslandschaft-nrw-komprimiert-pdf/von/gutachten-krankenhauslandschaft-nordrhein-westfalen/vom/mags/3137 (accessed 21.09.2020).
Penm J, MacKinnon N, Strakowski S, Ying J, Doty M (2017). Minding the Gap: Factors Associated With Primary Care Coordination of Adults in 11 Countries. *Annals of Family Medicine* 15(2):113–19. DOI: 10.1370/afm.2028.
Pro Generika e.V. (2019). Generika in Zahlen 2018. Available at: https://www.progenerika.de/wp-content/uploads/2019/05/Generika-in-Zahlen_2018.pdf (accessed 26.05.2020).
Pross C, Geissler A, Busse R (2017). Measuring, Reporting, and Rewarding Quality of Care in

5 Nations: 5 Policy Levers to Enhance Hospital Quality Accountability. *Milbank Quarterly* 95(1):136–83. DOI: 10.1111/1468-0009.12248.

Riens B, Erhard M, Mangiapane S (2012). Arztkontakte im Jahr 2007 – Hintergründe und Analysen. Ed. by Zentralinstitut für die kassenärztliche Versorgung in Deutschland (Versorgungsatlas). Available at: https://www.versorgungsatlas.de/fileadmin/ziva_docs/ID_14_Dok1_Bericht.pdf (accessed 21.09.2020).

Robert Bosch Stiftung GmbH (ed.) (2013). Gesundheitsberufe neu denken, Gesundheitsberufe neu regeln. Grundsätze und Perspektiven – eine Denkschrift der Robert Bosch Stiftung. Stuttgart: Robert Bosch Stiftung.

Robert Koch-Institut (RKI) (2015a). Bericht Gesundheit in Deutschland 2015. Available at: https://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GesInDtld/gesundheit_in_deutschland_2015.pdf (accessed 06.04.2020).

Robert Koch-Institut (RKI) (2015b). Gesundheit in Deutschland. Gesundheitsberichterstattung des Bundes. In collaboration with AC Saß, T Lampert, T Ziese und BM Kurth. Berlin: Robert Koch-Institut. Available at: https://www.rki.de/DE/Content/Gesundheitsmonitoring/Gesundheitsberichterstattung/GesInDtld/gesundheit_in_deutschland_2015.pdf (accessed 27.11.2019).

Robert Koch-Institut (RKI) (2015c). Kapitel 4: Wie steht es Prävention und Gesundheitsförderung. Gesundheitsberichterstattung des Bundes. Gemeinsam getragen von RKI und Destatis. Berlin. Available at:r http://www.gbe-bund.de/pdf/kap_04_gesber2015.pdf (accessed 13.07.2020).

Robert Koch-Institut (RKI) (2017). Früherkennung von Brustkrebs: Inanspruchnahme der Mammografie in Deutschland. DOI: 10.17886/RKI-GBE-2017-114.

Robert Koch-Institut (RKI) (2019a). Bericht der Nationalen Diabetes-Surveillance. Diabetes in Deutschland. Ed. by Robert Koch-Institut. Berlin. Available at: https://diabsurv.rki.de/SharedDocs/downloads/DE/DiabSurv/diabetesbericht2019.pdf?__blob=publicationFile&v=8 (accessed 20.11.2019).

Robert Koch-Institut (RKI) (2019b). Empfehlungen der Ständigen Impfkommission beim Robert Koch- Institut. 2019/2020. *Epidemiologisches Bulletin* 34 (accessed 15.07.2020).

Robert Koch-Institut (RKI) (2020a). COVID-19: Fallzahlen in Deutschland und weltweit. Berlin. Available at: https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Fallzahlen.html (accessed 24.06.2020).

Robert Koch-Institut (RKI) (2020b). COVID-19-Dashboard. Datenstand: 18.08.2020. 2020. Available at: www.corona.rki.de (accessed 01.09.2020).

Roll K, Stargardt T, Schreyögg J (2012). Effect of Type of Insurance and Income on Waiting Time for Outpatient Care. *Geneva Paperson Risk and Insurance – Issues and Practice* 37(4):609–32. DOI: 10.1057/gpp.2012.6.

Rossow V, Leiber S (2019). Kein Schattendasein mehr. Entwicklungen auf dem Markt für „24-Stunden-Pflege" | APuZ. Bundeszentrale für politische Bildung. Available at: https://www.bpb.de/apuz/294927/kein-schattendasein-mehr-entwicklungen-auf-dem-markt-fuer-24-stunden-pflege?p=all (accessed 25.05.2020).

Röttger J, Blümel M, Köppen J, Busse R (2016). Forgone care among chronically ill patients in Germany – Results from a cross-sectional survey with 15,565 individuals. *Health policy (Amsterdam, Netherlands)* 120(2). DOI: 10.1016/j.healthpol.2016.01.004.

Röttger J, Spranger A, Eckhart H, Achstetter K, Busse R (2019). Ergebnisbericht der Machbarkeitsstudie zur Messung der Leistungsfähigkeit ("Health System Performance Assessment") des deutschen Gesundheitssystems. durchgeführt im Auftrag des Bundesministeriums für Gesundheit. Ed.by. Technische Universität Berlin. Berlin. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/5_Publikationen/Gesundheit/Berichte/HSPA-Abschlussbericht.pdf (accessed 21.08.2020).

Sachkundenachweis: Freiverkäufliche Arzneimittel. Available at: https://www.sachkundenachweis.info/freiverkaeufliche-arzneimittel/#was-darf-ohne-nachweis-verkauft-werden (accessed 24.03.2020).

Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen (2014a). 5.

Einleitung: Versorgung in ländlichen Regionen | Gutachten 2014 | Gutachten | svr-gesundheit.de. SVR Gesundheit Redaktion. Available at: https://www.svr-gesundheit.de/?id=498 (accessed 06.04.2020).

Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen (2014b). Bedarfsgerechte Versorgung – Perspektiven für ländliche Regionen und ausgewählte Leistungsbereiche. Available at: https://www.svr-gesundheit.de/fileadmin/user_upload/Gutachten/2014/SVR-Gutachten_2014_Langfassung.pdf (accessed 19.07.2020).

Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen (2015). Sondergutachen. Krankengeld-Entwicklung, Ursachen und Steuerungsmöglichkeiten. Available at: https://www.svr-gesundheit.de/fileadmin/GA2015/SVR_Sondergutachten_2015_Krankengeld_Druckfassung.pdf (accessed 19.05.2020).

Sachverständigenrat zur Begutachtung der Entwicklung im Gesundheitswesen (2018). Bedarfsgerechte Steuerung der Gesundheitsversorgung. Available at: https://www.svr-gesundheit.de/fileadmin/user_upload/Gutachten/2018/SVR-Gutachten_2018_WEBSEITE.pdf (accessed 22.06.2020).

Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung (2018). Fachkräftebedarf im Gesundheits- und Sozialwesen 2030. Available at: https://www.sachverstaendigenrat-wirtschaft.de/fileadmin/dateiablage/gutachten/jg201819/arbeitspapiere/Arbeitspapier_06-2018.pdf (accessed 19.12.2020).

Schehadat MS, Groneberg DA, Bauer J, Bendels MHK (2017). Hilfsfristen des Rettungsdienstes in den deutschen Bundesländern. *Zentralblatt für Arbeitsmedizin, Arbeitsschutz und Ergonomie* 67(5):255–60. DOI: 10.1007/s40664-017-0203-3.

Schellhorn M (2007). Vergleich der Wartezeiten von gesetzlich und privat Versicherten in der ambulanten ärztlichen Versorgung. In: Robert Amhof, Jan Böcken und Bernard Braun (eds.). Gesundheitsmonitor 2007. Gesundheitsversorgung und Gestaltungsoptionen aus der Perspektive von Bevölkerung und Ärzten. 1. Aufl. Gütersloh: Verl. Bertelsmann Stiftung, 95–113.

Schneider EC, Sarnak DO, Squires D, Shah A, Doty MM (2017). Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care. Ed. by The Commonwealth Fund. Available at: https://interactives.commonwealthfund.org/2017/july/mirror-mirror/assets/Schneider_mirror_mirror_2017.pdf (accessed 29.07.2020).

Schoen C, Osborn R, Squires D, Doty M, Pierson R, Applebaum S (2011). New 2011 survey of patients with complex care needs in eleven countries finds that care is often poorly coordinated. *Health affairs (Project Hope)* 30(12):2437–48. DOI: 10.1377/hlthaff.2011.0923.

Schoen C, Osborn R, Squires D, Doty M (2013). Access, affordability, and insurance complexity are often worse in the United States compared to ten other countries. *Health affairs (Project Hope)* 32(12):2205–15. DOI: 10.1377/hlthaff.2013.0879.

Schrappe M (2018). APS-Weißbuch Patientensicherheit. Sicherheit in der Gesundheitsversorgung: neu denken, gezielt verbessern. In collaboration with Jens Spahn, Donald M. Berwick und Peter Durkin. Berlin: Medizinisch Wissenschaftliche Verlagsgesellschaft.

Schubert I, Ihle P, Köster I, Küpper-Nybelen J, Rentzsch M, Stallmann C, et al. (2014). Datengutachten für das Deutsche Institut für Medizinische Dokumentation und Information (DIMDI). Daten für die Versorgungsforschung. Zugang und Nutzungsmöglichkeiten. Available at: https://www.dimdi.de/static/.downloads/deutsch/dimdi-sekundaerdaten-expertise.pdf (accessed 20.11.2019).

Schwabe U, Paffrath D, Ludwig W-D, Klauber J (eds.) (2019). Arzneiverordnungs-Report 2019. 1. Auflage 2019. Berlin: Springer Berlin; Springer.

Schwierz C, Wübker A, Wübker A, Kuchinke BA (2011). Discrimination in waiting times by insurance type and financial soundness of German acute care hospitals. *The European Journal of Health Economics: HEPAC: health economics in prevention and care* 12(5):405–16. DOI: 10.1007/s10198-010-0254-2.

Siegel M, Busse R (2018). Can people afford to pay for health care? New evidence on financial protection in Germany. World Health Organization.

Statistische Ämter des Bundes und der Länder (2019). Krankenhausatlas. 2016. Ed. by Statistisches Bundesamt. Available at: https://krankenhausatlas.statistikportal.de/ (accessed 20.03.2020).

Statistische Ämter des Bundes und der Länder (2020). Krankenhausatlas Diagramme. Available at: https://krankenhausatlas.statistikportal.de/_diagramme.html, zuletzt aktualisiert am 17.07.2020 (accessed 27.08.2020).

Statistisches Bundesamt (2006). Grunddaten der Krankenhäuser 2005. Wiesbaden (Fachserie 12 Reihe 6.1.1). Available at: https://www.statistischebibliothek.de/mir/servlets/MCRFileNodeServlet/DEHeft_derivate_00006979/2120611057004.pdf (accessed 19.05.2020).

Statistisches Bundesamt (2012). Grunddaten der Krankenhäuser 2010. Wiesbaden (Fachserie 12 Reihe 6.1.1). Available at: https://www.statistischebibliothek.de/mir/servlets/MCRFileNodeServlet/DEHeft_derivate_00010402/2120611107004.pdf (accessed 19.05.2020).

Statistisches Bundesamt (2016). Verdienststrukturerhebung 2014. Niveau, Verteilung und Zusammensetzung der Verdienste und der Arbeitszeiten abhängiger Beschäftigungsverhältnisse - Ergebnisse für Deutschland - 2014. Wiesbaden (Fachserie 16 Heft 1). Available at: https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Verdienste-Verdienstunterschiede/_inhalt.html#sprg233158 (accessed 19.12.2020).

Statistisches Bundesamt (2017). Diagnosedaten der Patienten und Patientinnen in Krankenhäusern. 2016 (Fachserie 12 Reihe 6.2.1). Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Krankenhaeuser/Publikationen/Downloads-Krankenhaeuser/diagnosedaten-krankenhaus-2120621167004.pdf (accessed 04.09.2020).

Statistisches Bundesamt (2018a). Grunddaten der Krankenhäuser 2017. Wiesbaden (Fachserie 12, Reihe 6.1.1). Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Krankenhaeuser/_inhalt.html#sprg369934 (accessed 13.11.2019).

Statistisches Bundesamt (2018b). Pflegestatistik. Pflege im Rahmen der Pflegeversicherung-Deutschlandergebnisse. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Pflege/Publikationen/Downloads-Pflege/pflege-deutschlandergebnisse-5224001179004.pdf;jsessionid=F92669644902208A5D53435356695D31.internet722?__blob=publicationFile (accessed 20.03.2020).

Statistisches Bundesamt (2019a). Bevölkerung im Wandel. Annahmen und Ergebnisse der 14. koordinierten Bevölkerungsvorausberechnung. Wiesbaden. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Bevoelkerungsvorausberechnung/_inhalt.html (accessed 14.01.2020).

Statistisches Bundesamt (2019b). Bevölkerung: Deutschland, Stichtag. Fortschreibung des Bevölkerungsstandes Deutschland. Wiesbaden (Bevölkerung, 12411-0001). Available at: https://www-genesis.destatis.de/genesis/online/data (accessed 19.12.2020).

Statistisches Bundesamt (2019c). Gesundheitsausgaben: Deutschland, Jahre, Ausgabenträger (Gesundheitsausgaben, 23611-0001). Available at: https://www-genesis.destatis.de/genesis/online/data (accessed 19.12.2020).

Statistisches Bundesamt (2019d). Gesundheitsausgaben: Deutschland, Jahre, Ausgabenträger, Leistungsarten, Einrichtungen (Gesundheitsausgaben, 23611-0004). Available at: https://www-genesis.destatis.de/genesis/online/data (accessed 19.12.2020).

Statistisches Bundesamt (2019e). Pflegebedürftige nach Versorgungsart, Geschlecht und Pflegegrade. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Pflege/Tabellen/pflegebeduerftige-pflegestufe.html (accessed 07.05.2020).

Statistisches Bundesamt (2019f). Pflegestatistik 2018. Pflege im Rahmen der Pflegeversicherung-Pflegeheime und ambulante Pflegedienste. Stichtag: 15.12.2018. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Pflege/Tabellen/pflegeeinrichtungen-deutschland.html (accessed 11.03.2020).

Statistisches Bundesamt (2019g). Statistisches Jahrbuch Deutschland 2019. 1. Auflage. Wiesbaden: Statistisches Bundesamt.

Statistisches Bundesamt (2019h). Wirtschaftsrechnungen. Private Haushalte in der Informationsgesellschaft- Nutzung von Informations und Kommunikationstechnologien (Fachserie 15 Reihe 4). Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/IT-Nutzung/Publikationen/Downloads-IT-Nutzung/private-haushalte-ikt-2150400187004.pdf (accessed 02.04.2020).

Statistisches Bundesamt (2019i). Vorsorge- oder Rehabilitationseinrichtungen. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Vorsorgeeinrichtungen-Rehabilitationseinrichtungen/_inhalt.html (accessed 21.04.2020).

Statistisches Bundesamt (2020a). Angaben zur Krankenversicherung (Ergebnisse des Mikrozensus) – Fachserie 13 Reihe 1.1 – 2019. Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Gesundheitszustand-Relevantes-Verhalten/Publikationen/Downloads-Gesundheitszustand/krankenversicherung-mikrozensus-2130110199004.pdf (accessed 17.08.2020).

Statistisches Bundesamt (2020b). GENESIS – Online Datenbank. Wiesbaden. Available at: https://www-genesis.destatis.de/genesis/online (accessed 05.02.2020).

Statistisches Bundesamt (2020c). Gesundheitspersonal (Vollzeitäquivalente). Deutschland, Jahre, Einrichtungen, Geschlecht. 23621-0006. Statistisches Bundesamt. Available at: https://www-genesis.destatis.de/genesis/online (accessed 01.04.2020).

Statistisches Bundesamt (2020d). Gesundheitspersonal: Deutschland, Jahre, Beschäftigungsverhältnis, Geschlecht, Altersgruppen, Einrichtungen. 23621-0005. Statistisches Bundesamt. Available at: https://www-genesis.destatis.de/genesis/online (accessed 01.04.2020).

Statistisches Bundesamt (2020e). Gesundheitspersonal: Deutschland, Jahre, Beschäftigungsverhältnis, Geschlecht, Berufe im Gesundheitswesen. 23621-0004. Statistisches Bundesamt. Available at: https://www-genesis.destatis.de/genesis/online (accessed 01.04.2020).

Statistisches Bundesamt (2020f). Gesundheitspersonal: Deutschland, Jahre, Einrichtungen, Geschlecht. 23621-0001. Statistisches Bundesamt. Available at: https://www-genesis.destatis.de/genesis/online (accessed 31.03.2020).

Statistisches Bundesamt (2020g). Grunddaten der Krankenhäuser 2018 (Fachserie 12 Reihe 6.1.1). Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Krankenhaeuser/_inhalt.html#sprg234206 (accessed 10.11.2020).

Statistisches Bundesamt (2020h). Sozialleistungen. Angaben zur Krankenversicherung (Ergebnisse des Mikrozensus) 2019. Wiesbaden (Fachserie 13 Reihe 1.1). Available at: https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Gesundheit/Gesundheitszustand-Relevantes-Verhalten/Publikationen/Downloads-Gesundheitszustand/krankenversicherung-mikrozensus-2130110159004.pdf (accessed 23.09.2020).

Statistisches Bundesamt (2020i). Statistisches Bundesamt Deutschland – GENESIS-Online: Ergebnis 42271-0002. Beschäftigte und Umsatz der Betriebe im Verarbeitenden Gewerbe: Deutschland, Jahre, Wirtschaftszweige (WZ2008 2-/3-/4-Steller). Statistisches Bundesamt. Available at: https://www-genesis.destatis.de/genesis/online?sequenz=tabelleErgebnis&selectionname=42271-0002&zeitscheiben=3 (accessed 19.03.2020).

Statistisches Bundesamt (2020j). Gesundheitspersonalrechnung. Available at: https://www-genesis.destatis.de/genesis/online (accessed 29.04.2020).

Stiftung der Hochschulzulassung (2020). Hochschulstart. Aktuell. Available at: https://www.hochschulstart.de/sfh/startseite/news-1/aktuell (accessed 08.04.2020).

Stiftung für Hochschulzulassung (2018). Daten der bundesweit zulassungsbeschränkten Studiengänge an Hochschulen. Angebot und Nachfrage – Wintersemester 2018/19.

Stiftung für Qualität und Wirtschaftlichkeit im Gesundheitswesen (2019). ThemenCheck Medizin – Startseite. Available at: https://www.themencheck-medizin.iqwig.de/ (accessed 29.10.2019).

Stiftung zur Förderung der Hochschulrektorenkonferenz (2020). Hochschulkompass – Studieren in Deutschland und promovieren in Deutschland. Available at: https://www.hochschulkompass.de/home.html (accessed 08.04.2020).

Stöcker G, Reinhart M (2012). Grundständige Pflegeberufsausbildende Studiengänge in Deutschland. Available at: http://bildungsrat-pflege.de/wp-content/uploads/2014/10/Synopse_grundst__ndig_2012-09-21-web.pdf (accessed 05.04.2020).

Swart E, Matusiewicz D, Ihle P, Gothe H (Hg.) (2014). Routinedaten im Gesundheitswesen: Handbuch Sekundärdatenanalyse: Grundlagen, Methoden und Perspektiven. 2. vollständig überarbeitete und erweiterte Auflage, 304–13. 2. Aufl. Bern: Huber; Verlag Hans Huber.

Techniker Krankenkasse (Hg.) (2020). Geschäftsbericht 2019. Available at: https://gb2019.tk.de/app/uploads/2020/06/TK_Gescha%CC%88ftsbericht_2019.pdf (accessed 03.09.2020).

Transparency International (2020a). Corruption Perception Index. Transparency Deutschland fordert mehr Transparenz bei der Parteienfinanzierung und schärfere Regel für Mandatsträgerbestechung. Transparency International. Berlin. Available at: https://www.transparency.de/cpi/?L=0#:~:text=Korruptionswahrnehmungsindex%202019%20Der%20Corruption%20Perceptions%20Index%20%28CPI%29%20ist,der%20in%20Politik%20und%20Verwaltung%20wahrgenommenen%20Korruption%20auf. (accessed 12.08.2020).

Transparency International (2020b). Corruption Perceptions Index 2019: Full Source Description. Available at: https://images.transparencycdn.org/images/2019_CPI_SourceDescription_EN-converted-merged.pdf (accessed 18.08.2020).

UPD Patientenberatung Deutschland (2019). Unabhängige Patientenberatung Deutschland. Available at: https://www.patientenberatung.de/de (accessed 29.10.2019).

Verband der privaten Krankenversicherung (ed.) (2019a). Versicherte mit Krankenvollversicherung 2018. Available at: https://www.pkv.de/service/zahlen-und-fakten/ (accessed 13.11.2019).

Verband der privaten Krankenversicherung (2019b). Zahlenbericht 2018. Ed. by Verband der privaten Krankenversicherung.

Verbraucherzentrale Bundesverband e.V. (2019). Jahresbericht 2019. Ed. by Klaus Müller. Berlin. Available at: https://www.vzbv.de/sites/default/files/vzbv_jahresbericht_2019.pdf (accessed 13.08.2020).

Verbraucherzentrale NRW e.V. (2019). Startseite | Verbraucherzentrale.de. Available at: https://www.verbraucherzentrale.de/ (accessed 29.10.2019).

Verdi (2018). Krankenpflege: mehr raus als rein. Available at: https://gesundheit-soziales.verdi.de/service/drei/drei-66/++co++a50138d4-84f1-11e8-bb6e-525400f67940 (accessed 07.04.2020).

Wissenschaftliche Kommission für ein modernes Vergütungssystem (KOMV) (2019). Empfehlungen für ein modernes Vergütungssystem in der ambulanten ärztlichen Versorgung. Bericht der Wissenschaftlichen Kommission für ein modernes Vergütungssystem – KOMV. Im Auftrag des Bundesministeriums für Gesundheit. Available at: https://www.bundesgesundheitsministerium.de/fileadmin/Dateien/3_Downloads/K/KOMV/Bericht_der_Honorarkommission__KOMV__-_Dezember_2019.pdf (accessed 25.05.2020).

World Bank Group (2020). World Development Indicators. Available at: https://databank.worldbank.org/home.aspx (accessed 14.01.2020).

World Health Organization (WHO) (2020a). GHO | By category | Medical doctors. Available at: https://apps.who.int/gho/data/node.main.HWFGRP_0020?lang=en (accessed 03.04.2020).

World Health Organization (WHO) (2020b). Global Health Expenditure Database. World Health Organization. Available at: https://apps.who.int/nha/database/Select/Indicators/en (accessed 17.12.2020).

World Health Organization (WHO) (2020c). Global Health Expenditure Database. Ed. by. World Health Organization. Available at: https://apps.who.int/nha/database (accessed 17.12.2020).

World Health Organization (WHO) Regional Office for Europe (2020). European Health for All database (HFA-DB). Ed. by European Health Information Gateway. WHO. Available at: https://gateway.euro.who.int/en/datasets/european-health-for-all-database/ (accessed 17.12.2020).

Zander B, Busse R (2017). Die aktuelle Situation der stationären Krankenpflege in Deutschland. In: PBechtel, ISmerdka-Arhelger and K Lipp (eds.). Pflege im Wandel gestalten – eine

Führungsaufgabe. Lösungsansätze, Strategien, Chancen. 2., aktualisierte und erweiterte Auflage. Berlin: Springer, 125–37.

Zentralinstitut für die kassenärztliche Versorgung in Deutschland (ZI) (2019). Zi-Praxis-Panel Jahresbericht 2018. Wirtschaftliche Situation und Rahmenbedingungen in der vertragsärztlichen Versorgung der Jahre 2014 bis 2017. Available at: https://www.zi.de/fileadmin/images/content/Projekte/ZiPP_Jahresbericht_2018.pdf (accessed 20.05.2020).

Zich K, Sydow H (2015). Palliativversorgung. Modul 1 Sterbeort Krankenhaus- Regionale Unterschiede und Einflussfaktoren. Ed. by. Bertelsmann Stiftung (Faktencheck Gesundheit). Available at: https://faktencheck-gesundheit.de/de/publikationen/publikation/did/faktencheck-palliativversorgung-modul-1/index.html (accessed 17.06.2020).

9.2 Useful web sites

Federal Ministry of Health	https://www.bundesgesundheitsministerium.de/en/en.html
Payers/Insurers	**SHI** • (i) Federal Association of Sickness Funds (*GKV-Spitzenverband*): https://www.gkv-spitzenverband.de/english/statutory_health_insurance/statutory_health_insurance.jsp • (ii) A list of all sickness funds providing SHI coverage: https://www.gkv-spitzenverband.de/service/versicherten_service/krankenkassenliste/krankenkassen.jsp **PHI** • (i) Association of Private Health Insurance Companies (*Verband der Privaten Krankenversicherung*): http://www.pkv.de/verband/ • (ii) A list of all private health insurance companies providing PHI coverage: http://www.pkv.de/verband/mitglieder/
Providers	• Federal Association of SHI Physicians (*Kassenärztliche Bundesvereinigung*): http://www.kbv.de/html/about_us.php • List of Regional Associations of SHI Physicians: http://www.kbv.de/html/432.php • Federal Association of SHI Dentists (*Kassenzahnärztliche Bundesvereinigung*): http://www.kzbv.de/about-us.1021.de.html • List of Regional Associations of SHI Dentists: http://www.kzbv.de/verzeichnis-kassenzahnaerztliche-vereinigungen-kzv.757.de.html • The German Hospital Federation (*Deutsche Krankenhausgesellschaft*): https://www.dkgev.de/englisch/the-german-hospital-federation/mission-and-objectives/
Joint Committees and jointly financed institutes	• Federal Joint Committee (*Gemeinsamer Bundesausschuss*): http://www.english.g-ba.de/ • Institute for Quality and Efficiency in Healthcare (*IQWiG*): https://www.iqwig.de/en/home.2724.html • Institute for Quality Assurance and Transparency in Healthcare (*IQTIG*): https://www.iqtig.org/index

National Public Health Association/ Institutes	• Robert Koch-Institute: http://www.rki.de • Advisory Council for the Assessment of Developments in the Health Care System: http://www.svr-gesundheit.de/index.php?id=2 • Federal Institute for Pharmaceuticals and Medical Devices: http://www.bfarm.de/EN/Home/home_node.html • Federal Institute for Vaccines and Biomedicines (*Paul Ehrlich Institut*): https://www.pei.de/EN/home/home-node.html • Federal Institute for Infectious and Non-Communicable Diseases (*Robert Koch-Institut*): http://www.rki.de/EN/Home/homepage_node.html • Federal Institute for Health Education (*Bundeszentrale für gesundheitliche Aufklärung*): http://www.bzga.de/home/ • Federal Financial Supervisory Authority (*Bundesanstalt für Finanzdienstleistungsaufsicht*): http://www.bafin.de/EN/Homepage/homepage_node.html • Federal Office for Social Security (*Bundesamt für Soziale Sicherung*): https://www.bundesamtsozialesicherung.de/en/federal-office-for-social-security/about-the-federal-office-for-social-security/ • Federal Health Reporting: http://www.gbe-bund.de/gbe10/pkg_isgbe5.prc_isgbe?p_uid=gast&p_aid=0&p_sprache=E • Association of Research-based Pharmaceutical Companies: https://www.vfa.de/de/englische-inhalte
Medical doctors/health professionals' associations	• Federal Chamber of Physicians (*German Medical Association*): http://www.bundesaerztekammer.de/weitere-sprachen/english/german-medical-association/ • List of the Chambers of Physicians (*Bundesärztekammer*): http://www.bundesaerztekammer.de/ueber-uns/landesaerztekammern/adressen/ • Federal Chamber of Dentists (*Bundeszahnärztekammer*): https://www.bzaek.de/english.html • List of the Chambers of Dentists (regional): https://www.bzaek.de/wir-ueber-uns/organisationsstruktur/zahnaerztekammern-der-laender.html • Federal Chamber of Psychotherapists: http://www.bptk.de/ • List of the Chambers of Psychotherapists (regional): http://www.deutschepsychotherapeutenvereinigung.de/informationen/linkliste/psychotherapeutenkammern/ • Federal Union of German Associations of Pharmacists: http://www.abda.de/en/english/ Nurses, midwives, physiotherapists, occupational therapists and speech therapists do not participate in professional chambers, but rather in a variety of groups with voluntary membership. The following are used as examples: • German Nursing Council (*Deutscher Pflegerat*): http://www.deutscher-pflegerat.de/ • The German Nurses Association: https://www.dbfk.de/de/ueber-uns/English.php • German Midwifery Association: http://en.hebammenverband.de/home/ • German Association for Physiotherapy: https://www.physio-deutschland.de/ • German Association for occupational therapists: https://www.dve.info/ • German Association for speech therapists: https://www.dbl-ev.de/

9.2 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. This HiT has used a revised version of the template that is being piloted during 2016–2017 and will be available on the Observatory website once it has been finalized. The previous (2010) version of the template is available online at: http://www.euro.who.int/en/home/projects/observatory/publications/health-system-profiles-hits/hit-template-2010.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over 1200 indicators for the 34 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in All policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments.

HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights and cross-border health care.
3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other OOP payments, VHI and how providers and health workers are paid.
4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which IT systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.
5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care and dental care.
6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.
7. Assessment of the health system: provides an assessment of systems for monitoring health system performance, the impact of the health system on population health, access to health services, financial protection, health system efficiency, health care quality and safety, and transparency and accountability.
8. Conclusions: identifies key findings, highlights the lessons learnt from health system changes; and summarizes remaining challenges and future prospects.
9. Appendices: includes references and useful websites.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following:

- A rigorous review process.
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (hard copies, electronic publication, translations and launches). The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with each other to ensure that all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

9.3 The review process

This consists of three stages. Initially the text of the HiT is checked, reviewed and approved by the series editors of the European Observatory. It is then sent for review to two independent academic experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health, or appropriate authority, and policy-makers within those bodies are restricted to checking for factual errors within the HiT.

9.5 About the authors

Miriam Blümel is a Researcher at the Berlin University of Technology's Department of Health Care Management and the Berlin hub of the European Observatory on Health Systems and Policies. She holds a Diploma in Sociology from Freie Universität Berlin.

Anne Spranger is a Researcher at the Berlin University of Technology's Department of Health Care Management and works at the Berlin hub of the European Observatory on Health Systems and Policies. She holds a Master's Degree in Public Policy from the Hertie School of Governance, Berlin.

Katharina Achstetter is a Researcher at the Berlin University of Technology's Department of Health Care Management. She holds a Master's Degree in Public Health from the Berlin School of Public Health.

Anna Maresso is Country Monitoring Co-ordinator at the European Observatory on Health Systems and Policies. She holds a Master's Degree in European Studies from the London School of Economics & Political Science.

Reinhard Busse is Professor and Head of the Department of Health Care Management at the Berlin University of Technology and a Co-Director of the European Observatory on Health Systems and Policies.

The Health Systems in Transition Series

A series of the European Observatory on Health Systems and Policies

The Health Systems in Transition (HiT) country reports provide an analytical description of each health system and of reform initiatives in progress or under development. They aim to provide relevant comparative information to support policy-makers and analysts in the development of health systems and reforms in the countries of the WHO European Region and beyond.

The HiTs are building blocks that can be used:

- to learn in detail about different approaches to the financing, organization and delivery of health services;
- to describe accurately the process, content and implementation of health reform programmes;
- to highlight common challenges and areas that require more in-depth analysis; and
- to provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in countries of the WHO European Region.

How to obtain a HiT

All HiTs are available as PDF files at www.healthobservatory.eu, where you can also join our listserve for monthly updates of the activities of the European Observatory on Health Systems and Policies, including new HiTs, books in our co-published series with Cambridge University Press, Policy briefs, Policy Summaries, and the Eurohealth journal.

If you would like to order a paper copy of a HiT, please contact us at: contact@obs.who.int

The publications of the European Observatory on Health Systems and Policies are available at

www.healthobservatory.eu

HiT Country Reviews Published to Date

Albania
(1999, 2002[ag])
Andorra
(2004)
Armenia
(2001[g], 2006, 2013)
Australia
(2002, 2006)
Austria
(2001[e], 2006[e], 2013[e], 2018)
Azerbaijan
(2004[g], 2010[g])
Belarus
(2008[g], 2013)
Belgium
(2000, 2007, 2010, 2020)
Bosnia and Herzegovina
(2002[g])
Bulgaria
(1999, 2003[b], 2007[g], 2012, 2018)
Canada
(2005, 2013[c], 2020)
Croatia
(1999, 2006, 2014)
Cyprus
(2004, 2012)
Czech Republic
(2000, 2005[g], 2009, 2015)
Denmark
(2001, 2007[g], 2012)
Estonia
(2000, 2004[gj], 2008, 2013, 2018)
Finland
(2002, 2008, 2019)
France
(2004[cg], 2010, 2015)
Georgia
(2002[dg], 2009, 2017)
Germany
(2000[e], 2004[eg], 2014[e])
Greece
(2010, 2017)
Hungary
(1999, 2004, 2011)
Iceland
(2003, 2014)
Ireland
(2009)
Israel
(2003, 2009, 2015)
Italy
(2001, 2009, 2014)
Japan
(2009)
Kazakhstan
(1999[g], 2007[g], 2012)
Kyrgyzstan
(2000[g], 2005[g], 2011[g])
Latvia
(2001, 2008, 2012, 2019)
Lithuania
(2000, 2013)
Luxembourg
(1999, 2015)
Malta
(1999, 2014, 2017)
Mexico
(2020)
Mongolia
(2007)
Netherlands
(2004[g], 2010, 2016)
New Zealand
(2001*)
Norway
(2000, 2006, 2013, 2020)
Poland
(1999, 2005[k], 2011, 2019)
Portugal
(1999, 2004, 2007, 2011, 2017)
Republic of Korea
(2009*)
Republic of Moldova
(2002[g], 2008[g], 2012)
Romania
(2000[f], 2008, 2016)
Russian Federation
(2003[g], 2011[g])
Serbia
(2019)
Slovakia
(2000, 2004, 2011, 2016)
Slovenia
(2002, 2009, 2016)
Spain
(2000h, 2006, 2010, 2018)
Sweden
(2001, 2005, 2012)
Switzerland
(2000, 2015)
Tajikistan
(2000, 2010[g], 2016)
The former Yugoslav Republic of Macedonia
(2000, 2006, 2017)
Turkey
(2002[gi], 2011[i])
Turkmenistan
(2000)
Ukraine
(2004[g], 2010[g], 2015)
United Kingdom of Great Britain and Northern Ireland
(1999[g], 2015)
United Kingdom (England)
(2011)
United Kingdom (Northern Ireland)
(2012)
United Kingdom (Scotland)
(2012)
United Kingdom (Wales)
(2012)
United States of America
(2013, 2020)
Uzbekistan
(2001[g], 2007[g], 2014[g])
Veneto Region, Italy
(2012)

All HiTs are available in English.
When noted, they are also available in other languages:

- [a] Albanian
- [b] Bulgarian
- [j] Estonian
- [c] French
- [d] Georgian
- [e] German
- [k] Polish
- [f] Romanian
- [g] Russian
- [h] Spanish
- [i] Turkish

The publications of the European Observatory on Health Systems and Policies are available at

www.healthobservatory.eu

The Observatory is a partnership, hosted by WHO/Europe, which includes other international organizations (the European Commission, the World Bank); national and regional governments (Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas)); other health system organizations (the French National Union of Health Insurance Funds (UNCAM), the Health Foundation); and academia (the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM)). The Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

HiTs are in-depth profiles of health systems and policies, produced using a standardized approach that allows comparison across countries. They provide facts, figures and analysis and highlight reform initiatives in progress.

Print ISSN 1817-6119 Web ISSN 1817-6127