Health Systems in Transition
Vol. 22 No. 4 2020

United States
Health system review

Thomas Rice
Pauline Rosenau
Lynn Y. Unruh
Andrew J. Barnes

NORTH AMERICAN
OBSERVATORY
on Health Systems and Policies

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

Ewout van Ginneken (Editor) and Anna Maresso (Series Co-ordinator) were responsible for this HiT

Editorial Board

Health Systems in Transition

United States

Health System Review 2020

Thomas Rice
University of California, Los Angeles

Pauline Rosenau
University of Texas-Houston

Lynn Y. Unruh
University of Central Florida

Edited by: **Ewout van Ginneken**
European Observatory on Health Systems and Policies

Andrew J. Barnes
Virginia Commonwealth University

The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, academic organizations, governments, and health organizations. Through its work, the NAO promotes evidence-informed health system policy decision-making in Canada, Mexico, and the United States of America at the national and the subnational levels of government. Academic partners include the Institute of Health Policy Management and Evaluation at the Dalla Lana School of Public Health, University of Toronto, the National Institute of Public Health, Mexico, and the UCLA Fielding School of Public Health.

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. This HiT is the result of collaboration between the NAO and the European Observatory on Health Systems and Policies. The Observatory is a partnership, hosted by WHO/Europe, with a secretariat in Brussels and 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
USA

Suggested citation:

Rice T, Rosenau P, Unruh LY, Barnes AJ, van Ginneken E. United States of America: Health system review. *Health Systems in Transition,* 2020; 22(4): pp.i–441.

Print ISSN 1817-6127 Vol. 22 No. 4
Web ISSN 1817-6119 Vol. 22 No. 4

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 staff at the North American Observatory on Health Systems and Policies and the European Observatory on Health Systems and Policies. In order to facilitate comparisons between countries, reviews are based on a template prepared by the European Observatory, 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 and other countries. 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 data from national statistical offices, the Organisation for Economic Co-operation and Development (OECD), 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 website (http://www.healthobservatory.eu).

ACKNOWLEDGEMENTS

The Health Systems in Transition (HiT) profile on the United States was written by Thomas Rice (University of California, Los Angeles), Pauline Rosenau (University of Texas), Lynn Y. Unruh (University of Central Florida) and Andrew J. Barnes (Virginia Commonwealth University). It was edited by Ewout van Ginneken (Berlin University of Technology).

This health system review has been co-produced by the European Observatory on Health Systems and Policies and the North American Observatory on Health Systems and Policies.

The European Observatory on Health Systems and Policies is grateful to Gerard Anderson (Johns Hopkins University), Lawrence Brown (Columbia University), Bianca Frogner (University of Washington), Jon Gabel (NORC at the University of Chicago), Gerald Kominski (University of California, Los Angeles), Jonathan Oberlander (University of North Carolina-Chapel Hill), Mark Peterson (University of California, Los Angeles), Marc Rodwin (Suffolk University Law School), Richard Scheffler (University of California, Berkeley), Katherine Swartz (Harvard University), Jeff Wu (US Centers for Medicare & Medicaid Services), and Leon Wyszewianski (University of Michigan) for reviewing all or part of either this edition of the HiT or the previous one that was published in 2013. The authors would also like to thank L. Morgan Snell (Brown University) for her research support and assistance with tables and figures for this edition. All opinions are our own and do not reflect the views of the reviewers.

Pauline Rosenau thanks the University of Otago Medical School in New Zealand for setting time aside to work on the book during her William Evans Visiting Fellowship. Lynn Unruh thanks the University of Central Florida for providing a sabbatical to work on chapters 4 and 5 of the book.

Special thanks are extended to the OECD Health Data from which international data on health and health services were extracted. The HiT reflects data available in August 2020 unless otherwise stated.

The North American Observatory on Health Systems and Policies is a collaborative partnership of interested researchers, governments and health organizations promoting evidence-informed health system decision-making with academic directors in Canada, Mexico and the United States of America. Academic partners include the Institute of Health Policy Management and Evaluation at the Dalla Lana School of Public Health, University of Toronto, the National Institute of Public Health, Mexico, and the UCLA Fielding School of Public Health.

The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe, which includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy; the European Commission; the World Bank; UNCAM (French National Union of Health Insurance Funds); the Health Foundation; the London School of Economics and Political Science (LSE), and the London School of Hygiene & Tropical Medicine (LSHTM). The European Observatory has a secretariat in Brussels and hubs in London (at LSE and LSHTM) and at the Berlin University of Technology. The Observatory team working on HiTs is led by Josep Figueras (Director), Elias Mossialos, Martin McKee, Reinhard Busse (Co-directors), 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 of this HiT was coordinated by Jonathan North and Lucie Jackson, with the support of Sarah Cook (copyediting) and Steve Still (typesetting).

LIST OF ABBREVIATIONS

AARP	American Association of Retired Persons
ABMS	American Board of Medical Specialists
ACA	Affordable Care Act
ACAOM	Accreditation Commission for Acupuncture and Oriental Medicine
ACO	Accountable Care Organization
ADA	Americans with Disabilities Act
ADLs	activities of daily living
ADN	associate degree in nursing
AHA	American Hospital Association
AHIP	America's health insurance plans
AHRQ	Agency for Healthcare Research and Quality
AIAN	American Indian and Alaska Native
ALF	assisted living facility
AMA	American Medical Association
AMP	average manufacturer price
AOA	American Osteopathic Association
APC	ambulatory payment classification
APHA	American Public Health Association
APRN	advanced practice registered nurse
ARRA	American Recovery and Reinvestment Act
ASC	ambulatory surgical centre
ATSDR	Agency for Toxic Substances and Disease Registry
BLS	US Bureau of Labor Statistics
BMI	body mass index
BSN	bachelor of science degree in nursing
CAHPS	Consumer Assessment of Health Plan Survey
CAM	complementary and alternative medicine
CBO	Congressional Budget Office

CCRC	Continuing Care Retirement Community
CDC	Centers for Disease Control and Prevention
CDRH	Center for Devices and Radiological Health
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CfCs	conditions for coverage
CHC	community health center
CHIP	children's health insurance program
CHW	community health worker
CLASS	Community Living Assistance Services and Support Act
CMS	Centers for Medicare and Medicaid Services
CNA	certified nursing assistant
COBRA	Consolidated Omnibus Budget Reconciliation Act
COMLEX	comprehensive osteopathic medical licensing exam
CON	certificate of need
CO-OP	Consumer Operated and Oriented Plans Program
COPD	chronic obstructive pulmonary disease
CoPs	conditions of participations
CPOE	computerized provider-order entry
CR	cost reimbursement
CT	computerized axial tomography
DDS	doctor of dental surgery
DERP	Drug Effectiveness Review Project
DMD	doctor of dental medicine
DNP	doctor of nursing practice
DRG	diagnosis-related group
DSH	disproportionate share hospital
DTP	diphtheria, tetanus and pertussis
ED	Emergency Department
EHR	electronic health record
EIA	environmental impact assessments
EMC	emergency medical condition
EMR	electronic medical record
EMT	emergency medical technician
EMTALA	Emergency Treatment and Active Labor Act

EPA	Environmental Protection Agency
ERISA	Employee Retirement Income Security Act
FDA	Food and Drug Administration
FFS	fee for service
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FMAP	federal medical assistance percentage
FPL	federal poverty level
FTE	full-time equivalent
GAO	Government Accountability Office
GDP	gross domestic product
HCFAC	Health Care Fraud and Abuse Control Program
HEDIS	healthcare effectiveness data and information set
HHS	Department of Health and Human Services
HIE	Health Information Exchange
HIMSS	Health Information and Management Systems Society
HIPAA	Health Insurance Portability and Accountability Act
HIT	health information technology
HITECH	health information technology for economic and clinical health
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
HMO	health maintenance organization
HPSA	health professional shortage area
HQA	Hospital Quality Alliance
HQID	Hospital Quality Incentive Demonstration
HRSA	Health Resources and Services Administration
HSA	health savings account
HTA	health technology assessment
IADL	instrumental activities of daily living
ICF/MR/DD	intermediate care facilities for the mentally retarded or developmentally disabled
ICU	intensive care unit
IHCIA	Indian Health Care Improvement Act
IHS	Indian Health Service
IMG	international medical graduate
IMPACT	improving mood: promoting access to collaborative care

ING	international nursing graduate
IOM	Institute of Medicine
IPAB	Independent Payment Advisory Board
IRF-PAI	inpatient rehabilitation facility-patient assessment instrument
IRS	Internal Revenue Service
LPN	licensed practical nurse
LTC	long-term care
LVN	licensed vocational nurse
MCBS	Medicare Current Beneficiary Survey
MCO	managed care organization
MDS	minimum data set
MDS-HC	minimum data set for home care
MDS-NH	minimum data set for nursing homes
MedCac	Medicare Evidence Development and Coverage Advisory Committee
MedPAC	Medicare Payment Advisory Commission
MHS	Military Health System
MLR	medical loss ratio
MRI	magnetic resonance imaging
MSE	medical screening examination
MSN	master of science in nursing
MUA	medically underserved area
NACCHO	National Association of County and City Health Officials
NAPLEX	North American Pharmacist Licensure Exam
NASMHPD	National Association of State Mental Health Program Directors
NCCAM	National Center for Complementary and Alternative Medicines
NCCAOM	National Certification Commission for Acupuncture and Oriental Medicine
NCCPA	National Commission on Certification of Physician Assistants
NCLEX-RN	National Council Licensure Examination – Registered Nurses
NCQA	National Committee for Quality Assurance
NGO	non-governmental organization
NHIS	national health interview survey
NHPCO	National Hospice and Palliative Care Organization
NHVBP	Nursing Home Value-Based Purchasing project

NIH	National Institutes of Health
NIOSH	National Institute of Occupational Safety and Health
NP	nurse practitioner
OAM	Office of Alternative Medicine
OASIS	outcome and assessment information set
OECD	Organisation for Economic Co-operation and Development
OHRP	Office for Human Research Protections
OMB	Office of Management and Budget
OOP	out-of-pocket
OPPS	outpatient prospective payment system
OSCAR	Online Survey Certification and Report
OSCP	Office of Science Coordination and Policy
OSHA	Occupational Safety and Health Administration
OT	occupational therapist
OTA	office of technology assessment
P4P	pay-for-performance
PA	physician assistant
PBM	pharmaceutical benefits manager
PBMSHG	Pharmacy Benefits Management Strategic Healthcare Group
PCMH	patient-centred medical home
PCMH-N	PCMH neighbourhoods
PCORI	Patient-Centered Outcomes Research Institute
PCP	primary care provider
PDP	prescription drug plan
PEC	(Department of Defense) Pharmacoeconomic Center
PEPFAR	(United States) President's Emergency Plan for AIDS Relief
PHP	prepaid health plan
PHR	personal health record
POS	point of service
PPO	preferred provider organization
PPP	purchasing power parity
PSQIA	Patient Safety and Quality Improvement Act
PT	physical therapist
PTSD	post-traumatic stress disorder
QI	quality improvement

RAI	resident assessment instrument
RBRVS	resource-based relative value scale
RCT	randomized controlled trial
RHIO	Regional Health Information Organization
RN	registered nurse
RT	respiratory therapist
SAMHSA	Substance Abuse and Mental Health Services Administration
SAP	Scientific Advisory Panel
SGR	sustainable growth rate
SSA	Social Security Administration
SSI	social security income
STD	sexually transmitted disease
TCM	traditional Chinese medicine
TFL	TriCare for Life
UCAA	Urgent Care Association of America
UCC	urgent care centre
UIHO	urban Indian health organization
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USMLE	United States Medical Licensing Examination
USPHS	United States Public Health Service
VA	Office of Veterans Affairs
VAT	value added tax
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
VistA	Veterans Health Information Systems and Technology Architecture
WHO	World Health Organization
WIC	women, infants and children

LIST OF TABLES, FIGURES AND BOXES

Tables

Figures

Boxes

ABSTRACT

This analysis of the US health system reviews the developments in organization and governance, health financing, healthcare provision, health reforms and health system performance. The US health system has both considerable strengths and notable weaknesses. It has a large and well-trained health workforce and a wide range of high-quality medical specialists, as well as secondary and tertiary institutions, a robust health sector research programme and, for selected services, among the best medical outcomes in the world. But it also suffers from incomplete coverage of its citizenry, health expenditure levels per person far exceeding all other countries, poor measures on many objective and subjective measures of quality and outcomes, and an unequal distribution of resources and outcomes across the country and among different population groups. It is difficult to determine the extent to which deficiencies are health-system related, though it is clear that at least some of the problems are a result of poor access to care. The adoption of the Affordable Care Act in 2010 resulted in greatly improved coverage through subsidies for the uninsured to purchase private insurance, expanded eligibility for Medicaid (in some states), and greater protection for insured persons. Furthermore, primary care and public health received increased funding, and quality and expenditures were addressed through a range of measures such as financial rewards for providing higher-value care. At the same time, a change in political administration resulted in subsequent efforts to scale back the legislation. Many key issues remain, including further reducing the number of uninsured people, alleviating some of the burdensome patient cost-sharing requirements, and considering some new cost-containment methods such as allowing the government to negotiate drug prices with pharmaceutical manufacturers. The direction of future health policy will almost certainly depend on which political party is in power.

EXECUTIVE SUMMARY

The United States combines high levels of health funding with low levels of government involvement

The US economy is the largest in the world, and its gross national income per head is among the highest in the world. The United States has a federal system of government, with substantial authority delegated to its regional governments – the 50 states – and a historical reluctance regarding central planning or control either at federal or state level.

The US healthcare system reflects this wider context, having developed largely through the private sector, and combining high levels of funding with a distinctively low level of government involvement. The United States spends far more money on healthcare per head than any other country – 30% more than the second-highest country, Switzerland. As with many such national averages in this report, there are wide variations within this, though, with spending per head ranging from about $6000 per head in Utah to more than $12 000 in the District of Colombia. International comparison shows a varied picture in the United States with respect to quality and outcomes, though, with very good indicators for some diseases (e.g. certain cancers) and poor ones for others (e.g. asthma). With regard to health behaviours, the picture is again varied; the United States has been notably effective in reducing smoking rates but equally ineffective in grappling with nutritional health and obesity. Most Americans still receive their coverage from private health insurance; unusually for high-income countries, almost one-tenth of the population lacks health insurance – albeit this is a large improvement from the one-sixth figure prior to passage of major healthcare reform legislation in 2010.

Multiple private health insurance systems, serving mainly employed persons and their families, operate alongside the two major federal government health insurance programmes, Medicare and Medicaid

The US healthcare system can be thought of as multiple systems that operate independently and, at times, in collaboration with one another. Powers in the health sector are divided between the federal and state governments. For example, states fund and manage many public health functions, pay part of the cost of Medicaid and shape its organization within that state, and set the rules for health insurance policies that are not covered by self-insured employer plans. On the other hand, products such as pharmaceuticals and medical devices are regulated at federal level. Regulations to achieve objectives of quality, access and cost control in healthcare may be set by public or private entities, at any or all of federal, state or local levels. However, there is relatively limited public planning in terms of regulation, with little coordinated system-level planning in the United States in comparison to other countries, although incentives are sometimes used (for example to promote service provision in underserved areas).

Private sector stakeholders play a stronger role in the US healthcare system than in other high-income countries; the private sector led the development of the health system in the early 1930s, with the major federal government health insurance programmes, Medicare and Medicaid, only arriving in the mid-1960s. Medicare provides coverage for seniors and some of the disabled and Medicaid covers healthcare services for some of the poor and near-poor. Both public and private payers purchase healthcare services from providers subject to regulations imposed by federal, state and local governments as well as by private regulatory organizations.

The majority of Americans receive their coverage from private health insurance but about one in ten is uninsured

Public sources constitute just under half of healthcare expenditures in the United States, private third party payer sources about 40%, with the remaining 11% being paid by individuals out of pocket. Even though the proportion

of public and private spending on healthcare is roughly comparable, only a minority (36%) of the US population is covered by the public financing system – mainly through Medicare and Medicaid. Currently, the majority of Americans (55%) receive their coverage from private health insurance, with most privately insured individuals obtaining coverage through an employer. Purchasers in the form of health maintenance organizations (HMOs, which provide healthcare services on a prepaid basis through a network of providers) grew rapidly during the 1980s and early 1990s. Their market share has fallen substantially since then, due to a backlash against the tight restrictions put on patients, and preferred provider organizations (PPOs) have come to dominate the private insurance market. These contract with a network of providers, but they tend to pay physicians on a fee-for-service basis, and make it easier to seek care outside the network. In 2019, among insured employees, 44% were in PPOs and only 26% in HMOs or similar plans. Some 30% were in high-deductible plans with a savings option.

One in ten Americans is uninsured. Even among those with coverage, high out-of-pocket costs can be a barrier to receiving timely care and medications. Out-of-pocket (OOP) payments (e.g. direct payment by consumers for health services, coinsurance, co-payments, and deductible amounts) per capita have increased substantially in real terms in recent years. However, because of the growth in overall health expenditure, the percentage that OOP spending represents as a proportion of total health expenditure has decreased. Increases in real OOP spending over the last 40 years are not unique to the United States, although it has consistently ranked near the top in OOP spending per capita among high-income countries.

Payment for health services in the United States depends on the service provided, the type of health provider making the service available, and the funder, as well as the type of facility and geographical location where the service is offered. Given this complexity, payment mechanisms for each type of health service (e.g. inpatient hospital care, prescription drugs) vary widely according to the payer involved. Nevertheless, the United States is considered a leader worldwide in the development and use of innovative payment systems, in an attempt to improve the value of services provided.

Overall, the health workforce has expanded but some steps will need to be taken to forestall expected shortages in the supply of nurses

Since the 1970s there has been an increase in ambulatory facilities, such as physician and dentist offices and ambulatory surgical centres, and a decrease in institutional settings such as hospitals and nursing homes. The number of hospital beds has also fallen (and is amongst the lowest per head among high-income countries). Yet despite this decrease, bed occupancy rates in hospitals remain low, primarily due to a decrease in inpatient length of stay. The United States uses relatively more of medical technologies such as MRI and CT scanners than do most comparable countries, which may also be a factor in its relatively low average length of stay, but the average age of its physical infrastructure, such as hospital buildings, is slightly increasing.

Employment of physicians, chiropractors, nurses, physician assistants and all types of therapists has increased since 1990. Particularly large increases in employment of physician assistants and therapists over the last three decades (and moderate increases in nurses) may indicate increasing reliance on these professionals for primary health care. Relative to comparable countries, the United States is a little below the median in physician supply, but higher than average in nurse supply. Licensing and certification of health professionals is carried out at state level; there is reciprocal recognition of licences between most states, but not all.

The United States benefits from net inward migration of healthcare professionals from other countries. However, it suffers from internal maldistribution of the healthcare workforce: by practice and setting (with a disproportionate number of specialist physicians compared to primary care physicians); by geographical location (with variations of physician to population ratios of more than 50%, with more professionals in the Mid-Atlantic and the Northeast than in the South and the Mountain West, and greater shortages of physicians in rural areas); and by racial and ethnic representation in the workforce (with African Americans, Latinos and American Indians underrepresented). There is no consensus regarding the overall adequacy of the future supply of physicians. Different forecasts are predicted based on different assumptions about future demand and supply. For nurses, the history of nursing workforce adequacy in the United States is one of cyclical but deepening shortages in the past few decades, and nursing

workforce forecasts uniformly predict some degree of a shortage in the future unless significant steps are taken to increase supply. While greater demand for healthcare under the Affordable Care Act has exerted further pressures on the healthcare workforce, other provisions that expand the workforce under the ACA and other recent federal policies may help ameliorate these problems.

Medical services across the spectrum of care are provided via people's insurance or government programmes for specific groups

Insured individuals tend to enter the healthcare system through a primary care provider, though with some kinds of insurance (e.g. PPO) individuals may go directly to a specialist. Uninsured individuals often do not have a regular primary care provider, but instead visit community health centres (which provide primary care for low-income, uninsured and minority populations) and hospital emergency rooms for their healthcare, which hinders continuity of care. Due to out-of-pocket costs they may be reluctant or unable to seek out specialty, surgical or inpatient care unless they need emergency care; emergency departments in hospitals that receive payment from Medicare (which is nearly all hospitals in the United States) are required by law to provide care to anyone needing emergency treatment until they are stable. Retail clinics (in pharmacies or large stores) are also emerging as places to go for treatment of minor medical conditions.

The number of acute inpatient (hospital) discharges and length of stay have fallen over the past decades, with more acute-care services, such as surgery, being performed on an outpatient basis. For example, in 2017 more than 70% of all surgeries were provided in an outpatient setting. Mental health services have also shifted predominantly from inpatient to outpatient settings, accompanied by substantially increased use of pharmaceuticals and a reduction in provision of psychotherapy and mental health counselling. The utilization of post-acute-care services such as rehabilitation, intermittent home care and sub-acute care has increased over the past decades due to the financial need for hospitals to discharge patients not requiring acute care. Palliative care is received mostly through hospice services, either in the patient's home, or in a hospital, nursing home or other institutional setting. Hospice care has increased due to an expansion of Medicare benefits in 1983.

The informal care-giver (usually family or friends) plays an important role in US healthcare; 21% of Americans provide some form of informal care.

Pharmaceuticals are highly utilized in the United States compared to other industrialized countries, and their use has been growing. The use of complementary and alternative medicine (CAM) is also growing in the United States. Although physicians initially opposed the use of CAM, their stance has softened due to its popularity with the public and some scientific evidence regarding the efficacy of certain therapies. Patients must pay out-of-pocket for most forms of CAM.

Vulnerable populations in the United States include racial and ethnic minorities, those with low income, the uninsured, the disabled, the homeless, women, children, persons with HIV/AIDS, the mentally ill, the elderly and those living in rural areas. Federal, state and private agencies have programmes for reducing disparities in health and healthcare for these populations. Populations that have special access to health services include American Indians and Alaska Natives, military personnel, veterans and those who are institutionalized, such as prisoners.

Public health in the United States is decentralized, with the main locus of power at the state level. The actual public health structures at the state level vary significantly; in some states, public health functions are further decentralized (e.g. to county level). At federal level, the United States Public Health Service brings together eight federal public health agencies (including the Centers for Disease Control and Prevention, the Food and Drug Administration, and the National Institutes of Health). Federal, state and local public health services have been underfunded, and tend to be driven by immediate concerns; for example, as concerns rose over terrorist attacks in the United States, much of the public health funding and services switched to terrorism preparedness, leaving holes in other areas of public health.

The Patient Protection and Affordable Care Act (ACA) is a keystone reform that expanded healthcare coverage

The Patient Protection and Affordable Care Act (ACA) of 2010 constitutes the most significant health reform in the United States since Medicare, though its adoption was highly controversial, and its content reflects the general American preference for minimal government intervention. Improving

coverage was a central aim, with the ACA introducing a requirement for nearly all individuals to have some form of health insurance. This requirement, however, was ultimately repealed by the US Congress, effective January 2019. Nearly entirely as a result of the ACA, the country's uninsurance rate declined from about 16% to 9%.

Improved coverage occurred through both the public and private sectors: subsidies are provided for the uninsured to purchase private insurance (there is no government-provided healthcare delivery option), and in 39 states more low-income people have obtained coverage through expanded eligibility for Medicaid. The ACA also addresses underinsurance, providing greater protection for insured persons from their insurance being too limited in scope, inadequate in coverage or even being cancelled once they become ill. There are also increased funds for primary care to improve access. Public health is also strengthened, with increased funding for public health programmes, and requirements for chain restaurants and vending machines to display calories for food products.

Improving quality and controlling expenditures is also addressed through a range of measures. These are broadly a combination of incentives for efficiency and better-quality care plus penalties linked to inefficient care (e.g. for hospital readmissions), rather than any major restructuring of the health system as such; there are also some time-limited reductions in particular areas of spending (e.g. on pharmaceuticals). However, the ACA also contains measures pulling in the other direction; for example, a ban on US residents from buying and importing medication from other countries where it is cheaper, and preventing the use of cost-benefit analysis for healthcare practice or reimbursement in the Medicare programme. The overall quality and financial impact of the ACA is yet to be determined.

A myriad of factors contribute to the mixed results in health system performance but some of the problems in health outcomes do seem to be connected to poor access

The US health system has both considerable strengths and notable weaknesses. It has a large and well-trained health workforce and a wide range of high-quality medical specialists, as well as secondary and tertiary institutions, a robust health sector research programme and, for selected services, among

the best medical outcomes in the world. But it also suffers from incomplete coverage, underinsurance and inadequate care for the uninsured. Additional problems include health expenditure levels per person that far exceed all other countries, poor results on many objective and subjective measures of quality and outcomes, an unequal distribution of resources and outcomes across the country and among different population groups, and lagging efforts to introduce health information technology.

Overall, compared to other high-income countries, life expectancy in the United States is lower and mortality is higher, although there is disagreement over whether or not this relatively poor performance on mortality is due to structural problems with the healthcare system. Because a myriad of cultural, socioeconomic, environmental and genetic factors affect health status, it is difficult to determine the extent to which deficiencies are health-system related, though it seems that at least some of the problems with the US performance with respect to health outcomes are a result of poor access to care. Overall, though, given high costs and mixed performance, major concerns about the macro-level efficiency of the US health system remain.

There is little consensus on how the health system should be improved

It is difficult to generalize about the US healthcare system and, accordingly, hard to draw overall conclusions about its performance. In some respects, it is unquestionably among the best in the world, yet in other respects there are significant shortcomings.

One factor that sets the United States apart from its counterparts is the more limited government involvement. Historically, there has been a distaste for central planning, lack of control over the dissemination of medical technologies, reluctance to take advantage of the potential bargaining power afforded through large government insurers, the lack of centralized prices and prospective budgeting and, most importantly, the absence of guaranteed insurance coverage.

There is general agreement among those on the left and the right that reforms are necessary to control spending. Not surprisingly, however, there is almost no agreement on how to do so. There is less agreement on whether there is a quality problem, nor much agreement on the need to provide

coverage for the remaining uninsured. The fate of future healthcare reforms will depend greatly on future election results.

Americans face a fundamental challenge: the lack of effective dialogue, much less consensus, on how to improve their healthcare system. The gap between the views of the two major political parties – the Democrats and the Republicans – continues to widen, with little in the way of working towards common solutions. Such a climate tends to result in stasis, slowing down the country's ability to further innovate and improve the system. Solving the most vexing healthcare financing, delivery and policy issues depends as much on finding common ground as it does on medical, social, behavioural and organizational sciences.

1

Introduction

Chapter summary

- The US healthcare system exhibits a distinctively low level of government involvement. Most people receive their health insurance coverage from private insurance. About 10% of Americans under the age of 65 lack coverage.
- Per capita healthcare spending far exceeds that of any other country, with mixed performance in terms of quality and outcomes.
- The US performs more poorly than other high-income countries in various measures of vital statistics, including life expectancy and infant mortality. These rates, however, vary considerably across the 50 states and among different socioeconomic groups.
- Healthcare outcomes vary by disease type. One area in which the US performs well internationally includes various measures of cancer prevention and mortality.
- The US population exhibits low smoking rates but very high rates of overweight and obesity.

The US economy is the largest in the world and its gross domestic product per person is among the highest in the world. The United States has a federal system of government, with substantial authority delegated to its regional governments – the 50 states – and a historical reluctance regarding central planning or control either at federal or state level.

The US healthcare system reflects this wider context, having developed largely through the private sector and combining high levels of funding with a distinctively low level of government involvement. The US spends far more money per person on healthcare than any other country – double that of comparable wealthy countries (Kaiser Family Foundation, 2017a). As with many such national averages in this report, there are wide variations within this, with spending per person in 2014 ranging from about $6000 in Utah to almost $12 000 in the District of Colombia (Kaiser Family Foundation, 2014). International comparisons show a varied picture with respect to quality and outcomes, though, with very good indicators for some diseases (e.g. certain cancers) and poor ones for others (e.g. asthma). With regard to health behaviours, the picture is again varied; the US has been notably effective in reducing smoking rates but ineffective in grappling with nutritional health and obesity. Most Americans still receive their coverage from private health insurance. Unlike other high-income countries, 10% of the population under the age of 65 lacks health insurance, although this is far lower than the 18% figure prior to passage of the Affordable Care Act (Kaiser Family Foundation, 2018a).

1.1 Geography and sociodemography

The United States is located on the North American continent in the Western Hemisphere. The contiguous 48 states (excluding Alaska and Hawaii) are bordered by the Atlantic and Pacific Oceans on the east and west, respectively, by Canada on the north and by Mexico and the Gulf of Mexico on the south (Fig. 1.1). The total area is 9.7 million km^2 (3.7 million square miles), which ranks third in the world after Russia and Canada and above China.

The country is highly varied in topography and climate, with regions well below sea level to mountains above 6100 m (20 000 ft) and average annual temperatures ranging from a high of 26°C (78°F) to a low of –13°C (9°F) in a part of Alaska and –3°C (27°F) in the contiguous states. Similarly, precipitation levels range from a desert climate to tropical rainforest.

FIG. 1.1 Map of the United States

Source: Authors' compilation

In July 2019 the population of the US was over 328 million (US Census Bureau, 2020), which ranks third worldwide after China and India, both of which have over 1.3 billion[1] people. The racial and ethnic make-up is quite varied, with approximately 60% White, 18% Hispanic or Latino, 13% Black or African American and the remainder other and/or mixed racial and ethnic groups (US Census Bureau, 2020). (Race and ethnicity categories are self-reported in the Census and there are no fixed criteria as to how a person identifies himself or herself.) Hispanics and Latinos are the fastest growing group in terms of numbers but recently the group with the highest percentage growth was Asian (US Census Bureau, 2017).

The population figures reflect all people in the US, both legally and undocumented. While there is not an agreed figure for the latter, some estimates put it at about 11 million persons, a figure that has been relatively steady for almost 10 years (Krogstad, Passel & Cohn, 2018). Table 1.1 provides several demographic indicators and how they have changed from 1995 to the present time. Several are typical of high-income countries. Of particular note, however, is the decline in the fertility rate over the past decade. Unlike many European countries, fertility rates in the US had been around the generally accepted 'replacement rate' of 2.1 children per woman, and have been relatively steady over the past 40 years. In contrast, many OECD countries have rates below 1.5 and in Japan and Korea it is around 1.2. By 2016, however, the US rate had declined to 1.8 and by 2018 it had fallen to 1.7 (World Bank, 2020). The reasons for this are not clear, although part is likely related to women choosing to delay having children to help establish their working careers (Tavernise, 2018). Regardless, if this trend persists it will eventually translate into a smaller working-age population, putting more budgetary pressure on social spending.

1.2 Economic context

Table 1.2 presents trends in several macroeconomic indicators. In 2017 the US had a GDP of over $19 trillion, 60% higher than China and more than four times that of every other country. Per capita GDP, at nearly $60 000, is among the highest in the world, although on most lists is still exceeded by several smaller countries, including, in Europe, Luxembourg, Norway and Switzerland. The US economy is highly focused on the provision of services.

1 1 billion = 1 thousand million.

In 2018, among private industry, 74% of value added to the GDP was from the service sector, followed by 13% from manufacturing,12% from other industry, with just 1% from agriculture. These figures are comparable to other wealthy high-income countries (Federal Reserve Bank of St Louis, 2018).

TABLE 1.1 Trends in population/demographic indicators in the United States, selected years

	1995	2000	2005	2010	2015	2017 or latest
Total population (thousands)	266 278	282 162	295 517	309 338	321 040	325 719
Population aged 0–14 (% of total)	22.0	21.7	20.9	20.2	19.2	18.9
Population aged 65 and above (% of total)	12.7	12.3	12.3	13.0	14.6	15.4
Population density (people per km^2)	29.1	30.8	32.3	33.8	35.1	35.6
Population growth (average annual growth rate, %)	1.2	1.1	0.9	0.8	0.8	0.7
Fertility rate, total (births per woman)	2.0	2.1	2.1	1.9	1.8	1.8 *
Distribution of population (% urban)	77.3	79.1	79.9	80.8	81.7	82.1

Note: * Fertility rate latest data is for 2016

Source: World Bank, 2018 (last updated 21 September 2018)

TABLE 1.2 Macroeconomic indicators, United States, selected years

	1995	2000	2005	2010	2015	2017 or latest
GDP (current US$, billions)	7 664	10 285	13 094	14 964	18 121	19 391
GDP per capita, purchasing power parity (current international $)	28 782	36 450	44 308	48 375	56 444	59 532
GDP annual growth rate (nominal)	2.7	4.1	3.3	2.5	2.9	2.3
Unemployment, total (% of labour force)	5.6	3.9	5.0	9.6	5.3	4.4
Poverty rate before taxes and transfers, Poverty line 50%**	0.138	0.113	0.126	0.151	0.135	0.123
Income inequality (Gini coefficient of disposable income)*	–	40.4	–	40.4	–	41.5

Notes: * Public expenditure as % of GDP, deficit/surplus, government debt and Gini latest data for 2016; ** Break in series in 2013 (change in income definition)

Sources: World Bank, 2018; OECD, 2019; US Census Bureau, 2017

The unemployment rate, which exceeded 10% in 2010 in the wake of the global economic crisis, has decreased to just over 4% in 2017 and was only 3.7% in November 2018, one of the lowest levels on record (recent data not shown in table). Officially defined poverty rates, while varying year to year, have held fairly steady at around 12–14% although they rose to 15% during the Great Recession. The final line is the Gini coefficient, a measure of income inequality, where higher numbers indicate greater income inequality. Income inequality is considerably higher than in high-income European countries.

Taxes as a percentage of GDP in the US are lower than in other high-income countries (Fig. 1.2). Over the past three decades tax rates have fallen. For example, the top federal marginal tax rate in 1980 was 70%, but dropped to 28% by 1988. Since that time rates have risen and in 2013 the top rate increased further from 35% to 39.6%. They have since fallen, however, to 37%.

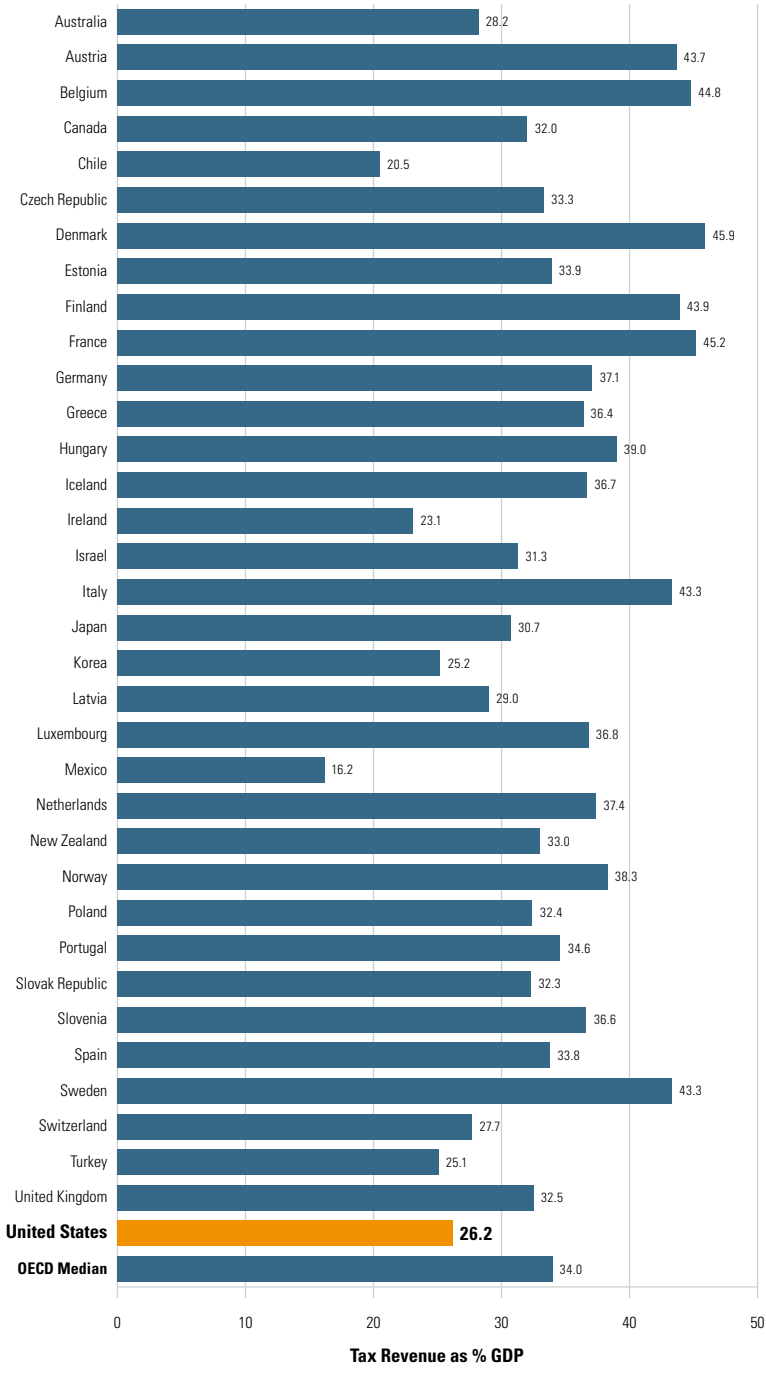
Returning to unemployment and poverty, Fig. 1.3 shows how the unemployment rate has varied over time by race/ethnicity. Rates for Blacks have consistently exceeded those for other racial and ethnic groups, with Hispanics having the second highest. Whites and Asian/Pacific Islanders have the lowest rates. Overall rates are down sharply since 2010, although the gap has been reduced for all groups over time.

Fig. 1.4 shows how poverty rates have varied according to race/ethnicity. These differences are somewhat more pronounced than for unemployment. While rates have generally remained steady at around 10% over the past 35 years, for Blacks and Hispanics they have fallen yet were still around 20% in 2016.

1.3 Political context

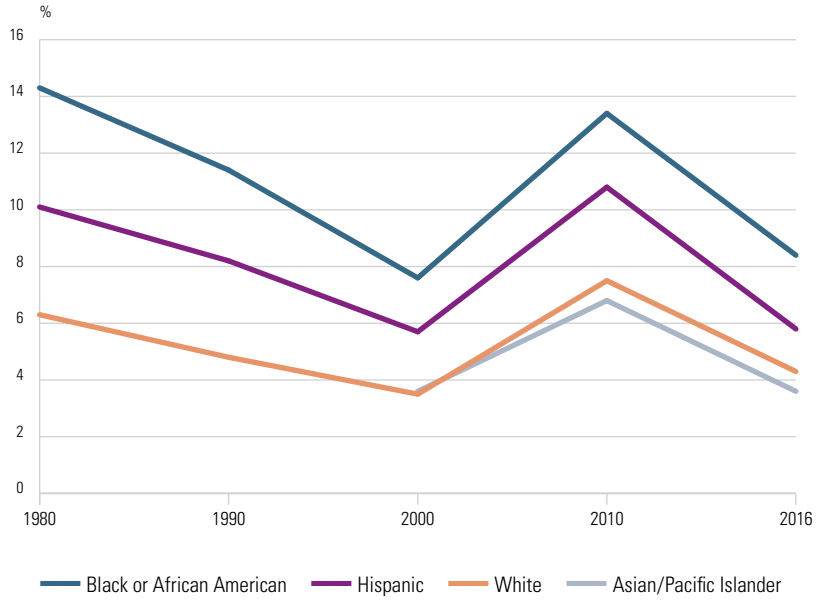
The United States is a federal constitutional democracy, with decision-making authority divided between the federal government and the state governments. It includes 50 states; the District of Columbia, which is home to the seat of the federal government in Washington, DC; and several territories including Puerto Rico, Guam and the US Virgin Islands. Power is shared among three branches of government: the executive, legislative and judicial.

FIG. 1.2 Tax revenue as a percentage of GDP, OECD countries, 2015



Source: OECD, 2020

FIG. 1.3 Percentage of the population unemployed in the United States, by race/ethnicity, 1980–2016

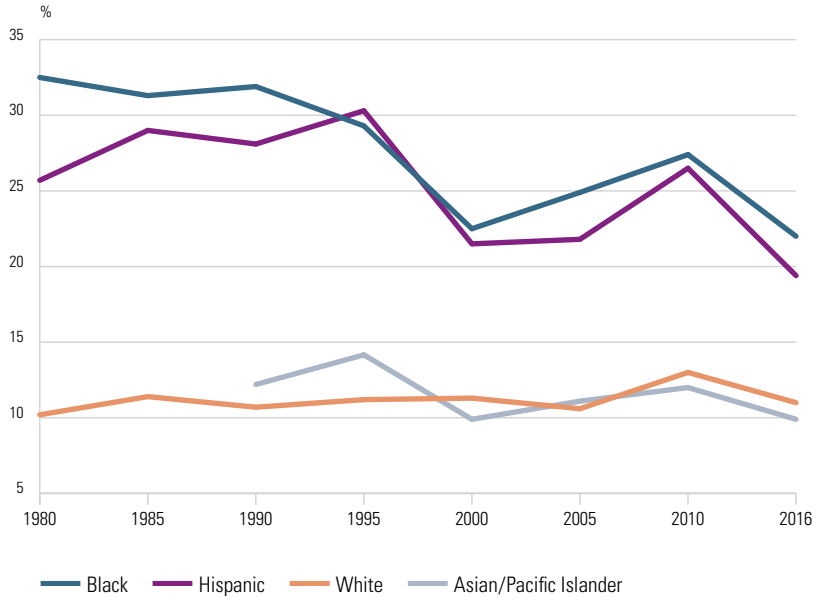


Source: Data from the US Bureau of Labour Statistics, 2017. Labor force characteristics by race and ethnicity, 2016. Available at: https://www.bls.gov/opub/reports/race-and-ethnicity/2016/home.htm

The President of the United States is elected every four years and is limited to two four-year terms. Rather than elections being based on popular vote, the US uses the 'Electoral College'. Each state, as well as the District of Columbia, has the same number of representatives in the Electoral College as the total number of representatives in Congress that they are assigned. With a few recent exceptions, the presidential candidate who receives the most popular votes in a state is given all the state's vote in the Electoral College. As a result, occasionally the candidate who receives a plurality of the national popular vote does not win the presidency. This has occurred five times – three times in the nineteenth century and most recently in 2000 and 2016.

The US Congress, the legislative branch of the federal government, comprises the Senate and the House of Representatives. The former contains two members per state (100 total) with a term of six years, and the latter 435 members allotted to the states based on their populations, with a term of two years. The judicial branch of the federal government includes the

FIG. 1.4 Percentage of the population below the poverty level in the United States, by race/ethnicity, 1980–2016



Source: Data from US Census Bureau. Available at: https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-people.html

Supreme Court, which has nine members who are appointed for life, and various district (regional) and appeals courts. Each state has a popularly elected governor whose term, except in one state, is four years. Most states limit governors to two terms. All but one state have two elected legislative bodies.

On a more local level, within states there are numerous county and city governments. While it is difficult to summarize the roles played by the different levels of government, the US Constitution enumerates specific responsibilities as being under the purview of the federal government, including war and defence and international and interstate commerce – but also other laws that are 'necessary and proper'. In general, state and local governments have authority over such activities as children's education, public safety/prosecution of crime and a host of other domains, including many public health activities. As discussed in Section 2.5.2, the states regulate the licensing of health professionals as well. There are also a number of areas in which the federal government and states share authority (road construction is one example). In the health area, the primary example is the Medicaid

programme (described in Chapter 3), which provides health insurance to low-income individuals and families. Medicaid is jointly funded but is administered by states, which in turn must meet certain federal requirements.

There are two main political parties, the Democratic Party and the Republican Party. Generally, the Democratic Party is viewed as left-of-centre and the Republican Party as right-of-centre, although there is variation within each party. Control of the presidency and the two chambers of Congress has changed hands several times in recent decades. More often than not, power has been divided. In 2008 the Democrats gained control of the presidency and both chambers of the Congress. In 2010, however, the Republicans gained control of the House of Representatives. In the election of November 2012 the Democrats held on to the Presidency and the Senate, and the Republicans retained control of the House of Representatives, continuing the divided federal government. In the 2014 mid-term election the Republicans won back control of the Senate. In the 2016 election the Republicans won the presidency and retained control of both houses of Congress as well. The 2018 election led to a shift in control of the House of Representatives, which reverted to Democrat hands – and once again a divided government. In the 2020 election the Democrats won the presidency.

Over recent decades there has been far less bipartisanship in Congress. Unlike in the past, even the most conservative Democrat has a more left-of-centre voting record than the most liberal Republican, and vice versa. Bipartisanship in the US Senate is particularly important, even to the majority party. Senate rules require 60 votes in order to close debate; thus, a group of 41 senators can, in most cases, effectively block legislation advocated by the majority from being considered by refusing to close debate, a procedure known as 'filibuster'. As noted in later chapters, however, there are ways of getting around the filibuster. Two of the most prominent examples in recent years were in the area of health policy: the passage of the Affordable Care Act in 2010, and the repeal of its individual mandate to purchase health insurance in 2017.

Lobbying and organized advocacy plays a large and growing role in US politics, with spending in excess of $3 billion every year since 2008 (Statista, 2019a). Spending on the 2016 presidential race amounted to $2.4 billion, with another $4 billion spent on congressional races. While there were, until recently, some limits on the donations of organizations to election contributions, in 2010 a Supreme Court ruling struck down some

of these regulations as violations of the right to freedom of speech, which is guaranteed by the first amendment of the US Constitution. This ruling and subsequent ones have resulted in greater campaign spending than in the past. At the same time, the sources of donations have become harder to determine because public reporting regulations have also been weakened (Roll Call, 2018).

As in any country, there are numerous controversial political issues, several of which affect healthcare. One that has received a great deal of attention in recent years concerns illegal immigration, usually from Mexico. The issue of the undocumented has garnered greater visibility in recent years, particularly with the election of Donald Trump as president, whose main campaign message centred on how illegal immigration compromised economic opportunity and safety of Americans.

1.4 Health status

In recent years there has been increasing recognition that the healthcare system is not the main contributor to people's health. Other factors – sometimes called 'social determinants of health' – include a vast array of cultural and environmental factors and are often far more important. A list of such factors is lengthy and includes parents' education, poverty, family upbringing, language barriers, neighbourhood effects, racial segregation, safety, workforce issues, social capital and a host of environmental factors such as clean air and water. Moreover, these factors interact with one another. Higher incomes make it possible, for example, to avoid dangerous jobs and having to live in dangerous neighbourhoods. These social determinants form a backdrop for the data reported below on health status in the US.

The US has experienced marked increases in life expectancy and reductions in most types of mortality in recent decades. Nevertheless, as other high-income countries have shown similar trends, the US has not gained in relative standing and continues to rank near the bottom with regard to such indicators as overall life expectancy, infant mortality and potential years of life lost.

1.4.1 *Life expectancy and mortality*

Life expectancy at birth has climbed, rising from 75.7 years in 1995 to 78.6 in 2017, an increase of 3.8% (Table 1.3). The gain for males exceeds that for females. Life expectancy at age 65 has risen even faster – 15% for males and 9% for females. Accordingly, mortality from all causes fell by over 20%. Much of this was due to a 42% reduction in mortality for circulatory diseases. Infant mortality rates fell by nearly 30%, but maternal mortality actually rose.

TABLE 1.3 Mortality and health indicators, United States, selected years

LIFE EXPECTANCY (YEARS)*	1995	2000	2005	2010	2015	2017 or latest
Life expectancy at birth, total	75.7	76.7	77.6	78.6	78.7	78.6
Life expectancy at birth, male	72.5	74.1	75	76.2	76.3	76.1
Life expectancy at birth, female	78.9	79.3	80.1	81	81.1	81.1
Life expectancy at 65, male	15.6	16	16.9	17.7	18	18
Life expectancy at 65, female	18.9	19	19.6	20.3	20.5	20.6
MORTALITY (PER 100 000 POPULATION)						
Circulatory diseases	445.6	395.4	321.3	264.8	256.5	–
Malignant neoplasms	245.2	231.1	212.9	197.9	185.3	–
Communicable diseases	31	23.4	24.2	22.7	22.2	–
External causes of death	59.9	56.1	61	60.2	67.7	–
All causes	1 049.4	994.6	910.3	835.3	837.2	–
Infant mortality rate (deaths per 1 000 live births)	8	7.1	6.8	6.2	5.8	5.7
Maternal mortality rate (deaths per 100 000 live births, modelled estimate)	12	12	13	14	14	–
Infant mortality rate (per 1000 live births)	17.80	10.64	8.02	6.73	5.30	5
Maternal mortality rate (per 100 000 live births)	12.98	9.49	13.85	17.57	12.00	–

Note: * 2016 latest year for life expectancy data

Sources: OECD, 2018a, 2019; World Bank, 2018 (World Development Indicators for maternal and infant mortality)

Between 2014 and 2017 life expectancy did decline slightly, from 79.8 to 79.7 years. The decline was even greater among Black, non-Hispanic males, falling by 0.7 years over this period. The largest declines, however, were among working-age Whites who had not completed college – largely part of the opioid crisis and called 'deaths of despair' by the researchers who first discovered the trend, Anne Case and Angus Deaton (Karma, 2020).

Of the 36 OECD countries, the US is in the bottom quartile in life expectancy, at 78.7 years in 2015, about two years below the median (Table 1.4). The only countries that are lower have per capita GDPs about half that of the US: Estonia, Hungary, Latvia, Lithuania, Mexico, Poland, the Slovak Republic and Turkey. The relative position of the US has fallen over time. As recently as 1980 US life expectancy was at the median, exceeding countries such as Austria, Belgium, Germany and the United Kingdom.

TABLE 1.4 Life expectancy (years), OECD countries, selected years

	1970	1980	1990	2000	2005	2010	2015
Australia	70.8	74.6	77	79.3	80.9	81.8	82.5
Austria	70	72.6	75.7	78.2	79.4	80.7	81.3
Belgium	71.1	73.3	76.1	77.8	79.1	80.3	81.1
Canada	–	75.3	77.2	79	80	81.1	81.9
Chile	62.3	–	72.9	76.8	77.6	78	79.9
Czech Republic	69.6	70.5	71.6	75.1	76.1	77.7	78.7
Denmark	73.3	74.3	74.9	76.9	78.3	79.3	80.8
Estonia	70	69.3	69.8	71	72.9	75.9	77.7
Finland	70.8	73.6	75	77.7	79.1	80.2	81.6
France	72.2	74.3	77	79.2	80.4	81.8	82.4
Germany	70.6	72.9	75.3	78.2	79.4	80.5	80.7
Greece	73.8	75.3	77.1	78.6	79.7	80.7	81.1
Hungary	69.2	69.2	69.5	71.9	73	74.7	75.7
Iceland	74	77	78.1	79.7	81.6	82	82.5
Ireland	71.2	72.9	74.9	76.6	79	80.8	81.5
Israel	–	73.9	76.7	78.8	80.2	81.7	82.1
Italy	–	74	77.1	79.9	80.9	82.1	82.6
Japan	72	76.1	78.9	81.2	82	82.9	83.9
Korea	62.3	66.1	71.7	76	78.2	80.2	82.1
Latvia	–	–	–	–	70.6	73	74.6
Lithuania	70.9	70.4	71.4	72.1	71.3	73.3	74.5

	1970	1980	1990	2000	2005	2010	2015
Luxembourg	–	72.8	75.6	78	79.5	80.7	82.4
Mexico	60.9	67.2	70.5	73.3	74	74.1	75.0
Netherlands	73.7	75.9	77	78.2	79.5	81	81.6
New Zealand	71.5	73.2	75.5	78.4	79.8	80.8	81.7
Norway	74.4	75.9	76.7	78.8	80.3	81.2	82.4
Poland	70	70.2	70.8	73.8	75.1	76.5	77.6
Portugal	66.7	71.4	74.1	76.9	78.2	80	81.2
Slovak Republic	70	70.6	71.2	73.4	74.2	75.6	76.7
Slovenia	68.7	–	73.8	76.1	77.4	79.8	80.9
Spain	72	75.4	77	79.3	80.3	82.4	82.9
Sweden	74.8	75.9	77.7	79.7	80.7	81.6	82.3
Switzerland	73.1	75.7	77.5	79.9	81.4	82.6	83
Turkey	54.2	58.1	67.5	71.1	73.1	74.3	78
United Kingdom	71.9	73.2	75.7	77.9	79.2	80.6	81
United States	**70.9**	**73.7**	**75.3**	**76.7**	**77.6**	**78.6**	**78.7**
OECD Median	**70.9**	**73.3**	**75.5**	**77.9**	**79.15**	**80.55**	**81.25**

Source: OECD, 2018a

A similar pattern exists with respect to infant mortality (Table 1.5). Overall death rates per 1000 live births declined by 34% between 1990 and 2015, to 5.9. The reductions were similar for neonatal deaths (under 28 days) and post-neonatal deaths (28 days to 11 months). There are, however, notable differences according to race/ethnicity, with rates for Whites, Hispanics/Latinos and Asians/Pacific Islanders significantly lower than those for Blacks/African Americans. Rates for the latter are more than twice that of Whites (CDC, 2017a).

A conundrum that appears in many (but not all) US health indicators is the relatively good statistics for Hispanics and Latinos, whose overall infant mortality rates are slightly lower than Whites. This is sometimes termed the Latino 'health paradox'. While Latinos have very high uninsurance rates, as well as lower incomes and educational levels on average, compared to Whites, many health indicators are nevertheless comparable to their wealthier, better educated and insured counterparts (Vega, Rodriquez & Gruskin, 2009). Latino smoking rates are also much lower than non-Hispanic Whites and African Americans (American Lung Association, 2020).

TABLE 1.5 Infant, neonatal and postneonatal mortality rates in the United States, selected years

	1990	1995	2000	2005	2010	2014
INFANT DEATHS PER 1 000 LIVE BIRTHS						
All mothers	8.9	7.6	6.9	6.9	6.1	5.8
White	7.2	6.3	5.7	5.8	5.2	4.9
Black or African American	16.9	14.7	13.6	13.6	11.2	10.7
Hispanic or Latina	7.5	6.3	5.6	5.6	5.3	5
Asian or Pacific Islander	6.6	5.3	4.9	4.9	4.3	3.9
American Indian or Alaska Native	13.1	9.0	8.3	8.1	8.3	7.6
NEONATAL DEATHS PER 1 000 LIVE BIRTHS						
All mothers	5.7	4.9	4.6	4.5	4.0	3.9
White	4.6	4.1	3.8	3.8	3.5	3.3
Black or African American	11.1	9.6	9.1	8.9	7.3	7.3
Hispanic or Latina	4.8	4.1	3.8	3.9	3.6	3.5
Asian or Pacific Islander	3.9	3.4	3.4	3.4	3.0	2.8
American Indian or Alaska Native	6.1	4.0	4.4	4.0	4.3	4.1
POSTNEONATAL DEATHS PER 1 000 LIVE BIRTHS						
All mothers	3.2	2.6	2.3	2.3	2.1	1.9
White	2.7	2.2	1.9	2.0	1.8	1.6
Black or African American	5.9	5.0	4.3	4.3	3.9	3.4
Hispanic or Latina	2.7	2.1	1.8	1.8	1.7	1.5
Asian or Pacific Islander	2.7	1.9	1.4	1.5	1.3	1
American Indian or Alaska Native	7.0	5.1	3.9	4.0	4.0	3.5

Notes: Infant is under 1 year of age, neonatal under 28 days, and postneonatal from 28 days to 11 months

Source: NCHS, 2016, Table 10

In the most recent year in which comparable data are available (2014), the US had the highest infant mortality rate of any country with comparable income. Among the OECD countries shown, the only ones with higher rates than the US are Chile, Mexico and Turkey (Table 1.6). US rates were more than double those of the Czech Republic, Estonia, Finland, Iceland, Italy, Japan, Luxembourg, Norway, Slovenia, Spain and Sweden. Although US rates have dropped considerably – 37% in the 24-year period ending in 2014 – other countries' rates have declined faster. In 1970 the US rate was almost at the median. Spain is an example of how much other countries have improved. In 1970 its infant mortality rate was 40% higher than that of the US; in 2014 it had fewer than half the number of infant deaths as the US.

TABLE 1.6 Infant Mortality, OECD Countries, selected years (deaths per 1000 live births)

	1970	1980	1990	2000	2005	2010	2014
Australia	17.9	10.7	8.2	5.2	4.9	4.1	3.4
Austria	25.9	14.3	7.8	4.8	4.2	3.9	3
Belgium	21.1	12.1	8.0	4.8	3.7	3.6	3.4
Canada	18.8	10.4	6.8	5.3	5.4	5	4.7
Chile	79.3	33.0	16.0	8.9	7.9	7.4	7.2
Czech Republic	20.2	16.9	10.8	4.1	3.4	2.7	2.4
Denmark	14.2	8.4	7.5	5.3	4.4	3.4	4
Estonia	17.7	17.1	12.3	8.4	5.4	3.3	2.7
Finland	13.2	7.6	5.6	3.8	3.0	2.3	2.2
France	18.2	10.0	7.3	4.5	3.8	3.6	3.5
Germany	22.5	12.4	7.0	4.4	3.9	3.4	3.2
Greece	29.6	17.9	9.7	5.9	3.8	3.8	3.7
Hungary	35.9	23.2	14.8	9.2	6.2	5.3	4.5
Iceland	13.2	7.7	5.9	3.0	2.3	2.2	2.1
Ireland	19.5	11.1	8.2	6.2	3.8	3.6	3.3
Israel	24.2	15.6	9.9	5.5	4.4	3.7	3.1
Italy	29.6	14.6	8.1	4.3	3.3	3	2.8
Japan	13.1	7.5	4.6	3.2	2.8	2.3	2.1
Korea	45.0	–	–	–	4.7	3.2	3
Latvia	17.7	15.3	13.7	10.3	7.7	5.6	3.8
Lithuania	19.3	14.5	10.2	8.6	7.1	5	3.9
Luxembourg	24.9	11.5	7.3	5.1	2.6	3.4	2.8

	1970	1980	1990	2000	2005	2010	2014
Mexico	–	52.6	32.5	20.8	16.9	14.1	12.5
Netherlands	12.7	8.6	7.1	5.1	4.9	3.8	3.6
New Zealand	16.7	13.0	8.4	6.3	5.0	5.5	5.7
Norway	11.3	8.1	6.9	3.8	3.1	2.8	2.4
Poland	36.4	25.4	19.4	8.1	6.4	5	4.2
Portugal	55.5	24.3	10.9	5.5	3.5	2.5	2.9
Slovak Republic	25.7	20.9	12.0	8.6	7.2	5.7	5.8
Slovenia	24.5	15.3	8.4	4.9	4.1	2.5	1.8
Spain	28.1	12.3	7.6	4.4	3.7	3.2	2.8
Sweden	11.0	6.9	6.0	3.4	2.4	2.5	2.2
Switzerland	15.1	9.1	6.8	4.9	4.2	3.8	3.9
Turkey	–	–	–	28.4	25.8	12	11.1
United Kingdom	18.5	12.1	7.9	5.6	5.1	4.2	3.9
United States	**20**	**12.6**	**9.2**	**6.9**	**6.9**	**6.1**	**5.8**
OECD Median	**19.75**	**12.5**	**8.15**	**5.3**	**4.3**	**3.65**	**3.4**

Source: OECD, 2018a

Rates do vary a great deal *within* the US, however. Massachusetts' rate of 3.9 deaths per 1000 births is less than half that of Alabama, Louisiana and Mississippi – although still above the European average (CDC, 2017b).

One possible reason for the poor showing of US infant mortality relates to pre-term babies – although as noted below it is not the only reason. More such babies are born in the US, which could be due both to problems with prenatal care and the health of mothers, but also because more of an effort is made in the US to save such babies (MacDorman & Mathews, 2010). Moreover, the US is more likely to define very low-weight babies as live births compared to other countries, raising calculated infant mortality rates (Sachs et al., 1995; Joseph et al., 2012). In a study of 25 countries in which the US ranked 22nd in neonatal mortality (infant death within the first 28 days of birth), its ranking rose to 11th – a lower rate than exhibited in Canada, Denmark, England and the Netherlands – when only live births of more than 1000g were considered (Joseph et al., 2012).

Another study, by Chen and colleagues (2016), while not directly contradicting this finding, shows that the US performance also lags largely because of infant deaths after the age of one month. For these infants, high-tech medicine is not the answer. Rather, helping new mothers provide care to their infants, particularly those with lower birth weights, is likely to be

more effective. They point to Finland and Austria as examples of European countries that provide nurse visits to parents' homes, where they can conduct check-ups and offer advice.

Another measure of mortality is potential years of life lost, which is defined here by summing the total number of years of life lost due to death before the age of 70. Table 1.7 shows this for the 36 OECD countries. While the US figure fell by 28% between 1990 and 2014, it remains the seventh highest; those countries with higher potential years of life lost all had far lower average per capita income.

TABLE 1.7 Potential years of life lost, OECD countries, selected years

	1990	2000	2005	2010	2014
Australia	4 707	3 653	–	2 853	2 674
Austria	5 320	4 098	3 543	3 220	2 794
Belgium	5 147	4 382	3 745	3 446	3 026
Canada	4 817	3 682	3 503	3 113	3 022*
Chile	7 620	5 107	4 500	4 368	4 003
Czech Republic	7 403	5 151	4 576	3 942	3 427
Denmark	5 566	4 275	3 723	3 253	2 855
Estonia	20 051	9 331	7 808	5 633	5 095
Finland	5 755	4 402	4 028	3 557	3 007
France	5 323	4 310	3 764	3 441	3 013
Germany	5 379	4 028	3 476	3 129	2 880
Greece	4 445	3 791	3 481	3 193	2 988
Hungary	10 173	8 345	7 221	5 962	5 056
Iceland	4 379	3 447	2 466	2 445	2 223
Ireland	5 116	4 424	3 527	2 978	2 697
Israel	4 549	3 698	3 171	2 660	2 435
Italy	4 579	3 437	2 955	2 527	2 276
Japan	3 653	3 144	2 914	2 616	2 361
Korea	6 670	4 951	3 834	3 248	2 726
Latvia	21 172	9 983	9 628	7 571	6 687
Lithuania	18 378	8 885	9 760	7 949	7 037
Luxembourg	5 578	3 830	3 077	2 738	2 200
Mexico	10 006	7 377	6 641	6 866	6 429
Netherlands	4 324	3 723	3 199	2 738	2 540
New Zealand	5 803	4 178	3 675	3 354	3 080*

	1990	2000	2005	2010	2014
Norway	4 647	3 775	3 110	2 775	2 401
Poland	8 826	6 616	6 019	5 334	4 715
Portugal	6 616	5 196	–	3 492	3 049
Slovak Republic	–	6 480	5 921	5 114	4 601
Slovenia	6 314	5 091	4 353	3 407	2 765
Spain	5 052	3 867	3 354	2 716	2 398
Sweden	4 129	3 095	2 769	2 487	2 347
Switzerland	4 670	3 488	2 937	2 483	2 355
Turkey	–	–	–	3 727	4 149
United Kingdom	4 912	–	3 629	3 262	2 980
United States	**6 382**	**5 277**	**5 115**	**4 629**	**4 611**
OECD Median	**5 545**	**4 465**	**5 115**	**5 115**	**3 643**

Notes: Potential life years lost refer to the total years lost due to mortality before age 70, per 100,000 person aged 0–69. * Most recent data available is from 2013

Source: OECD, 2018a

1.4.2 *Specific diseases*

Table 1.8 compares the 10 leading causes of death in the US for two years – 1980 and 2015 – separately for men and women and for Whites and Blacks/African Americans. Most notable is how little the leading causes changed over this 35-year period, with the large majority of deaths coming from the same chronic conditions.

TABLE 1.8 Leading causes of death in the United States, 1980 and 2015

	1990		2015	
	Cause of death	**Number of deaths**	**Cause of death**	**Number of deaths**
MALE				
	All causes	1 075 078	All causes	1 373 404
1	Diseases of heart	405 661	Diseases of heart	335 002
2	Malignant neoplasms	225 948	Malignant neoplasms	313 818
3	Unintentional injuries	74 180	Unintentional injuries	92 919

	1990		2015	
	Cause of death	**Number of deaths**	**Cause of death**	**Number of deaths**
4	Cerebrovascular diseases	69 973	Chronic lower respiratory diseases	72 498
5	Chronic obstructive pulmonary diseases	38 625	Cerebrovascular diseases	58 288
6	Pneumonia and influenza	27 574	Diabetes mellitus	43 123
7	Suicide	20 505	Suicide	33 994
8	Chronic liver disease and cirrhosis	19 768	Influenza and pneumonia	26 903
9	Homicide	18 779	Chronic liver disease and cirrhosis	25 666
10	Diabetes mellitus	14 325	Alzheimer's disease	33 690
FEMALE				
	All causes	914 763	All causes	1 339 226
1	Diseases of heart	355 424	Diseases of heart	298 840
2	Malignant neoplasms	190 561	Malignant neoplasms	282 112
3	Cerebrovascular diseases	100 252	Chronic lower respiratory diseases	82 543
4	Unintentional injuries	31 538	Cerebrovascular diseases	82 035
5	Pneumonia and influenza	27 045	Alzheimer's disease	76 871
6	Diabetes mellitus	20 526	Unintentional injuries	53 652
7	Atherosclerosis	17 848	Diabetes mellitus	36 412
8	Chronic obstructive pulmonary diseases	17 425	Influenza and pneumonia	30 159
9	Chronic liver disease and cirrhosis	10 815	Nephritis, nephrotic syndrome and nephrosis	24 518
10	Certain conditions originating in the perinatal period	9 815	Septicaemia	21 388
WHITE				
	All causes	1 738 607	All causes	2 306 861
1	Diseases of heart	683 347	Diseases of heart	540 857
2	Malignant neoplasms	368 162	Malignant neoplasms	505 613
3	Cerebrovascular diseases	148 734	Chronic lower respiratory diseases	141 766

	1990		2015	
	Cause of death	**Number of deaths**	**Cause of death**	**Number of deaths**
4	Unintentional injuries	90 122	Unintentional injuries	125 773
5	Chronic obstructive pulmonary diseases	52 375	Cerebrovascular diseases	116 788
6	Pneumonia and influenza	48 369	Alzheimer's disease	99 866
7	Diabetes mellitus	28 868	Diabetes mellitus	61 938
8	Atherosclerosis	27 069	Influenza and pneumonia	48 877
9	Chronic liver disease and cirrhosis	25 240	Suicide	39 796
10	Suicide	24 829	Nephritis, nephrotic syndrome and nephrosis	39 078
BLACK OR AFRICAN AMERICAN				
	All causes	233 135	All causes	320 072
1	Diseases of heart	72 956	Diseases of heart	75 249
2	Malignant neoplasms	45 037	Malignant neoplasms	69 389
3	Cerebrovascular diseases	20 135	Cerebrovascular diseases	17 988
4	Unintentional injuries	13 480	Unintentional injuries	15 745
5	Homicide	10 172	Diabetes mellitus	13 869
6	Certain conditions originating in the perinatal period	6 961	Chronic lower respiratory diseases	10 475
7	Pneumonia and influenza	5 648	Homicide	9 173
8	Diabetes mellitus	5 544	Nephritis, nephrotic syndrome and nephrosis	9 170
9	Chronic liver disease and cirrhosis	4 790	Alzheimer's disease	8 156
10	Nephritis, nephrotic syndrome and nephrosis	3 416	Septicaemia	6 647

Source: NCHS, 2016, Table 19

Some of the patterns observed are:

- The appearance of septicaemia as the 10th leading cause of death among females and Blacks/African Americans in 2016, which may point to a lack of access to immediate, high-quality medical care.
- The appearance of Alzheimer's disease on the list, which is most likely caused by changes in the coding for dementia.
- The fact that suicide is a top-10 leading cause of death among Whites, whereas homicide is in the top-10 for Blacks/African Americans.

Even in cases where relative rankings have not changed, there are important patterns in the actual number of deaths. Most notably, while diseases of the heart ranked as the leading cause of death for all population groups in both years and malignant neoplasms (cancer) ranked second, their trends diverged. The number of heart-related deaths fell by 17% between 1980 and 2016 in spite of a large population of older Americans, but cancer deaths rose by 43%. Some of this is undoubtedly due to the fact that Americans are living longer – in part as a result of reduced heart disease – and therefore have more opportunity to succumb to cancer-related death.

Five-year cancer survival rates have been improving in the US. Over a 30-year period ending in 2013, among males, which had the larger increase in survival, they rose by 51% among Whites and by 92% among Blacks/African Americans (Table 1.9). Most impressive is the near-universal survival rates from prostate cancer among men, where 30 years earlier five-year survival rates were about 70%.

1.4.3 *Health behaviours*

The United States has been quite successful in reducing cigarette consumption. Smoking rates were more than halved between 1965 and 2016 (Table 1.10), with current rates among adults of just 15.5% of the population. Rates are somewhat higher for males than females. Of the four gender/race/ethnicity groups shown in the table, Black/African American females had the lowest rate (13.2%). Of the 36 OECD countries, the US had the fourth lowest figures for percentage of those aged 15 or older who are daily smokers, only Australia, Iceland and Sweden having fewer adult smokers (OECD Health Statistics, not shown in table).

TABLE 1.9 Cancer survival rates (percentages) among the US population

	WHITE				BLACK OR AFRICAN AMERICAN			
	1981–1983	**1987–1989**	**1999–2001**	**2006–2013**	**1981–1983**	**1987–1989**	**1999–2001**	**2006–2013**
MALE								
All sites	**46.6**	**52.8**	**67.5**	**70.3**	**34.2**	**38.9**	**61.0**	**65.6**
Oral cavity and pharynx	52.8	54.1	62.0	68.3	25.3	30.0	39.4	44.5
Oesophagus	6.5	11.0	18.6	21.8	3.7	5.3	10.6	10.5
Stomach	15.4	15.5	21.0	28.8	16.2	16.6	25.0	24.1
Colon	61.7	56.1	61.4	67.8	67.0	44.6	50.7	53.6
Rectum	51.0	58.9	66.5	67.6	38.1	47.7	60.0	59.4
Pancreas	2.1	3.1	5.5	8.9	3.7	5.1	3.7	8.6
Lung and bronchus	11.7	12.0	13.3	16.4	10.1	10.8	10.8	13.3
Prostate gland	73.1	84.4	99.7	99.7	62.8	71.1	97.3	97.3
Urinary bladder	78.5	82.0	81.5	80.2	64.9	67.5	71.6	70.9
Non-Hodgkin's lymphoma	50.5	48.1	62.8	72.9	49.2	41.7	48.9	61.3
Leukaemia	37.8	45.5	52.7	64.7	33.4	32.7	44.2	60.1
FEMALE								
All sites	**56.0**	**60.6**	**66.8**	**69.7**	**44.4**	**47.7**	**54.3**	**59.5**
Colon	54.8	59.9	65.5	66.3	51.5	53.7	51.6	57.0
Rectum	53.2	58.4	66.4	68.7	42.5	56.9	58.2	70.1
Pancreas	3.0	3.3	4.4	8.0	3.2	5.8	7.4	7.4
Lung and bronchus	16.6	15.3	18.0	21.8	14.9	11.1	15.2	19.0
Melanoma of skin	87.2	91.3	94.6	95.1	–	89.5	76.1	76.2
Breast	77.1	85.1	90.8	92.0	63.4	71.1	78.8	81.5
Cervix uteri	67.8	72.5	73.4	70.6	59.2	57.0	66.0	58.4
Corpus uteri	82.2	83.9	85.9	85.6	50.7	56.7	61.4	65.7
Ovary	38.4	38.1	43.5	46.0	37.5	33.7	35.6	38.1
Non-Hodgkin's lymphoma	51.1	55.2	67.5	74.5	49.8	51.0	63.8	69.2

Source: NCHS, 2016, Table 37

TABLE 1.10 Percentage of people in the United States aged 15 and over who were cigarette smokers (age adjusted), selected years

	1965	1979	1990	2000	2005	2010	2015
All persons	41.9	33.3	25.3	23.1	20.8	19.3	15.3
Male	51.2	37.0	28.0	25.2	23.4	21.2	16.8
Female	33.7	30.1	22.9	21.1	18.3	17.5	13.8
White male	50.4	36.4	27.6	25.4	23.3	21.4	16.8
Black or African American male	58.8	43.9	32.8	25.7	25.9	23.3	20.3
White female	33.9	30.3	23.5	22.0	19.1	18.3	14.8
Black or African American female	31.8	30.5	20.8	20.7	17.1	16.6	13.2

Source: NCHS, 2016, Table 47

Data on other health indicators that are affected by health behaviours are shown in Table 1.11. From the late 1980s to the early 1990s the prevalence of diabetes, hypertension, and overweight and obesity increased considerably in the US: several of these may have risen as a result of unhealthy diets, lack of exercise and other behaviours. Only rates of high cholesterol fell.

TABLE 1.11 Health indicators affected by health behaviours

HEALTH CONDITIONS	1988–1994	2001–2002	2005–2006	2009–2010	2013–2014
	Percentage of persons 20 years of age and over, age adjusted				
Diabetes (blood glucose > or + 126 mg/dL)	8.8	10.6	10.4	11.5	11.9
High Serum total cholesterol (>240 or = mg/dL)	20.8	16.5	15.6	13.2	11.1
Hypertension [1]	25.5	29.7	30.5	30.0	30.8
Overweight (BMI > or = 25)	56.0	65.6	66.9	68.8	70.4
Obesity (BMI > or = 30)	22.9	30.5	34.4	35.7	37.8
Untreated dental caries	27.7	21.3	24.4	N/A	31.5

Notes: [1] Has elevated blood pressure and/or takes antihypertensive medication. Elevated blood pressure is defined as having systolic pressure of at least 140 mmHg or diastolic pressure of at least 90 mmHg

Source: NCHS, 2016, Table 53

Of the 22 OECD countries that report measured (as opposed to self-reported) data on obesity, defined as a body mass index (BMI) of 30 or more, the US had the highest rate, approaching 40% (OECD Health Statistics, not shown in table). Moreover, higher obesity rates are likely to contribute to the fact that the US spends much more on healthcare than other countries, a subject explored further in Chapter 3. In one study it was concluded that obese Americans spend 41.5% more on healthcare than others, controlling for relevant confounders (Finkelstein et al., 2009). Further research is needed to determine whether this is also the case in other countries.

Table 1.12 shows comparable US data for adolescents (aged 12–19 years). Over a 20-year period ending in 2014, the percentage of overweight adolescents doubled. There are relatively small variations by sex and race, with obesity being a little more common among Whites compared to Black/African Americans and those of Mexican origin. The main pattern is that rates are much lower for those from higher-income families – about 14%, compared to about 20–25% for the other income groups.

One likely cause of rising obesity is a lack of physical exercise. Recent data indicate, however, that exercise rates are now increasing – albeit they are still low. In 2015, 21.6% of American adults met both aerobic activity and muscle-strengthening guidelines established by the federal government, compared to 14.3% in 1998. There was a similar drop in the percentage who met neither of the guidelines (CDC, 2016) (Table 53). Data for children also show a mild upswing in exercise.

Finally, Table 1.13 provides data on measures of substance use in 2015: the percentage of the population aged 12 and older (by age and by race/ethnicity) who, in the past month, had used alcohol, engaged in binge drinking, used any tobacco, any marijuana, and any illicit drug. About half of the population had some alcohol use, peaking at age 26–34. The same pattern held for tobacco use, which peaked at about one-third of the population. Alcohol bingeing, marijuana use and illicit drug use were highest for ages 18–25. In this age group 38% reported binge drinking, 21% marijuana use, and 23% any illicit drug use. Since marijuana is defined as an illicit drug by the federal government, it is clear that the vast majority of illicit drug use is for marijuana.

TABLE 1.12 Obesity among adolescents, selected years

	1988–1994	1999–2002	2003–2006	2007–2010	2011–2014
12–19 YEARS OF AGE					
Both sexes	10.5	16.0	17.6	18.2	20.5
Boys	11.3	16.7	18.2	19.4	20.1
Not Hispanic or Latino:					
White only	11.6	14.6	17.3	17.1	18.7
Black or African American only	10.7	18.8	18.4	21.2	20.9
Mexican origin	14.1	24.7	22.1	27.9	22.8
Girls	9.7	15.3	16.8	16.9	21
Not Hispanic or Latino:					
White only	8.9	12.6	14.5	14.6	20.4
Black or African American only	16.3	23.5	27.7	27.1	24.4
Mexican origin	13.4*	19.6	19.9	18.0	24.2
Per cent of poverty level[1]*:*					
Below 100%	15.8	19.8	19.3	24.3	22.4
100% – less than 200%	11.2	15.1	18.4	20.1	25.7
200% – less than 400%	9.4	15.7	19.3	16.3	19.7
Over 400%	*	13.9	12.6	14	13.7*

Notes: [1] Per cent of poverty level was calculated by dividing family income by the US Department of Health and Human Services' poverty guideline specific to family size, as well as the appropriate year and state. Persons with unknown percent of poverty level are excluded (6% in 2011–2014)

* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error (RSE) of 20%–30%

Overweight is defined as body mass index (BMI) at or above the sex- and age-specific 95th percentile BMI cutoff points from the 2000 CDC Growth Charts: United States. Advance data from vital and health statistics; no. 314. Hyattsville, MD: National Center for Health Statistics, 2000

Source: NCHS, 2016, Table 59

TABLE 1.13 Substance use among the population aged 12 and older, 2015

CHARACTERISTIC	ALCOHOL USE	BINGE ALCOHOL USE[1]	ANY TOBACCO USE[2]	MARIJUANA	ANY ILLICIT DRUG[3]
PER CENT OF POPULATION					
12 years and over, age adjusted	51.7	24.9	23.9	8.3	10.1
Males	56.2	29.6	29.6	10.6	12.5
Females	47.4	20.5	18.5	6.2	7.9
12–13 years	1.3	0.7	0.6	0.8	2.6
14–15 years	7.4	3.8	4.6	5.7	7.2
16–17 years	19.7	12.6	12.4	14.2	16.3
18–25 years	58.3	39.0	33.0	19.8	22.2
26–34 years	65.0	38.3	35.1	12.9	15.4
35 years and over	53.5	21.8	22.1	5.1	6.6
White only	57.0	26.0	25.9	8.4	10.3
Black or African American only	43.8	23.4	26.0	10.7	12.5
Hispanic or Latino	42.4	25.7	17.7	7.2	9.2
Asian only	39.7	14.0	11.4	3.0	4.0
American Indian or Alaska Native only	37.9	24.1	37.0	11.2	14.2

Notes: [1] Binge alcohol use for men is defined as drinking five or more drinks on the same occasion on at least one day in the past 30 days. Starting in 2015, binge alcohol use for women is defined as drinking four or more drinks on the same occasion on at least one day in the past 30 days

[2] Any tobacco product includes cigarettes, smokeless tobacco (such as snuff, dip, chewing tobacco or 'snus'), cigars or pipe tobacco

[3] Any illicit drug includes marijuana, cocaine (including crack), heroin, hallucinogens (including LSD, PCP, peyote, mescaline, psilocybin mushrooms, 'Ecstasy', ketamine, DMT/AMT/'Foxy' and Salvia divinorum), inhalants, methamphetamine, or the misuse of prescription pain relievers, tranquillizers, stimulants and sedatives

Source: NCHS, 2016, Table 50. Updated using 2015 data and additional measures by authors

2

Organization and governance

Chapter summary

- The US healthcare system is highly complex, not only due to the country's large population and size, but because there are multiple insurers and delivery systems that are often uncoordinated.

- Power in a health sector that is characterized by relatively weak planning and regulatory systems is divided between the federal, state and local governments and a myriad of private organizations. Key private organizations, particularly most health insurers, operate on a for-profit basis.

- The key federal agency is the Department of Health and Human Services, which oversees the Medicare and Medicaid programmes through its Centers for Medicare and Medicaid Services. It also contains other key agencies including the National Institutes of Health, the Centers for Disease Control and Prevention, the Veterans Health Administration, and the Food and Drug Administration.

- Private sector stakeholders play a stronger role in the system than in other high-income countries. The private sector led the development of the health system before the Second World War, with the major federal government health insurance programmes, Medicare and Medicaid, only arriving in the mid-1960s. Medicare provides

coverage for seniors and some of the disabled, and Medicaid covers healthcare services for some of the poor and near-poor. Nevertheless, the majority of Americans receive coverage from private insurance, most of which is provided through the workplace.

- A key, relatively recent reform was the Patient Protection and Affordable Care Act of 2010. Its major provisions were implemented in 2014, and included both expansions of publicly and privately funded insurance coverage. Nevertheless, the US is unique among high-income countries in that nearly 10% of the population lacks health insurance.

There is relatively limited formal healthcare planning compared with other countries, although incentives are sometimes used as ways for the marketplace to achieve national goals (e.g. to promote service provision in underserved areas and to encourage states to expand Medicaid).

2.1 Historical background

The US healthcare system developed largely through the private sector. No major government health insurance programmes operated until the mid-1960s and most government involvement until then was through state rather than federal regulations. While more Americans have private rather than public insurance – and the 2006 inclusion of prescription drugs under Medicare and the 2010 comprehensive reforms both relied on expanding the private insurance market – public and private sector spending are now roughly equal (see Section 3.1). This is primarily because Medicare beneficiaries – seniors and the permanently disabled population – are more costly to cover than others.

2.1.1 *Early developments*

Through most of the nineteenth century many different types of practitioner in the United States competed to provide care, much of which was of poor quality (Starr, 1982). Physicians typically had neither particularly high incomes nor social status. This changed only gradually towards the beginning

of the twentieth century with the confluence of various factors, including a more scientific basis for medicine, improvements in medical training and the quality of hospitals, and consolidation of competing physician interests under the auspices of local (county) and state medical societies and nationally through the American Medical Association (AMA).

The 1910 publication of the Flexner Report represented a turning point in US health policy. Commissioned by the Carnegie Foundation, the report provided a detailed account of the poor quality of most US medical schools at the time. This eventually led to the closure of some of the worst facilities, and improvements in medical school curricula, the length of training, the quality of admitted students and the training facilities. As a result, individuals faced higher barriers in entering the field.

During the latter part of the nineteenth century and the first part of the twentieth century hospitals also changed dramatically. Previously their reputation was poor; they were places to be avoided by those who had alternatives (i.e., people who could afford it received care in their home), and they mainly served the poor. As the scientific basis of medicine improved, facilities were enhanced and physicians became better trained – the hospital was transformed. The modern hospital largely evolved as a not-for-profit organization wherein physicians were granted privileges to treat their own patients. This was particularly appealing to the medical community because physicians could avail themselves of the latest technology and a cadre of trained nurses free of charge – which has been dubbed a 'rent-free workshop' (Gabel & Redisch, 1979).

2.1.2 *The origins and growth of private health insurance*

Private health insurance in the United States had its beginnings around the early 1930s, with the establishment of non-profit Blue Cross plans for hospital care, and soon thereafter Blue Shield plans for physician care. The genesis of Blue Cross was a desire for hospital coverage on the part of workers and employers on the one hand, and on the other the need for a steady stream of revenues on the part of hospitals mired in the Great Depression. The first hospital insurance plan began in 1929 in Dallas, Texas. In other parts of the country hospitals banded together to provide this coverage under the auspices of Blue Cross, allowing enrollees to have the freedom to choose their own hospital. These arrangements were non-profit and did not require

the cash reserves typical of private insurance because hospitals guaranteed the provision of services, which was possible because of empty beds during the Depression (Starr, 1982). Near the end of the 1930s Blue Shield plans that covered physicians' services were established under similar principles: non-profit status and free choice of provider.

Blue Cross and Blue Shield plans began to encounter competition from commercial (for-profit) insurers, particularly after the Second World War. While the Blues had, until that time, used 'community rating' (where all contracting groups pay the same price for insurance), commercial insurers employed 'experience rating' (where premiums vary based on the past health status of the insured group), allowing them to charge lower prices to employer groups with lower expected medical expenses. Eventually, the Blues had to follow suit and switch to experience rating to remain competitive, blurring the distinction between the non-profit and for-profit insurers (Law, 1974; Starr, 1982). By 1951 more Americans obtained their hospital insurance from commercial insurers than from Blue Cross (Law, 1974). More recently, a number of Blue Cross and Blue Shield plans have reorganized to become for-profit organizations.

The number of Americans with private health insurance coverage grew dramatically in the 1940s and 1950s. While only 6 million had some type of health insurance coverage in 1939, this had risen to 75 million people – half the population – by 1950, that is, in only about a ten-year period. By the time Medicare and Medicaid were enacted in 1965, insurance coverage (public and private) had further expanded to 156 million – 80% of the population (Jost, 2007).

The tremendous growth rate in private insurance during this period was due in part to the fact that employer contributions to employee private health insurance plans were not considered taxable income for the employee (Gabel, 1999; Helms, 2008). There were other reasons for the expansion of private insurance through employment, however. Unions negotiated for coverage for their members and this was viewed as an important benefit because healthcare costs were rising at the time (Jost, 2007). There are also economies of scale involved in purchasing through a group, and premiums tend to be lower since there is less concern about adverse selection. These factors, coupled with rising incomes with the onset and conclusion of the Second World War and new organizational forms to provide coverage, also help explain the growth (Cunningham, 2000). With no systematic government programme for providing coverage until the mid-1960s, this

demand was satisfied in part through the employment-based system, at least for many of those in the workplace.

2.1.3 *Medicare and Medicaid*

In 1965 the first major federal health insurance programmes, Medicare and Medicaid, were established. Prior to their creation, a variety of indigent and charity care programmes existed for low-income patients. In one such programme, begun in 1950, the federal government matched state payments to medical providers for those receiving public assistance. In another, the Kerr-Mills Act of 1960 provided assistance to states to help seniors who were not on public assistance, but who required help with their medical bills (US Department of Health and Human Services, 2000).

Medicare covered Americans aged 65 and older, and Medicaid covered about half of those with low incomes[2]. At its inception, Medicare was divided into two parts. Part A: Hospital Insurance was social insurance in that it was funded by payroll taxes on the working population. Part B: Supplemental Medical Insurance covered outpatient and physicians' visits and, although voluntary, was purchased by nearly all seniors since 75% of the premiums were paid from general federal revenues. Medicaid, in contrast, reflected a welfare model in that only those who met both income and certain categorical eligibility requirements (e.g. children under the age of 18 and female adults with children) could receive the coverage, which was largely provided free of patient charges. As discussed in Section 3.4, states have had some flexibility in defining who is eligible for coverage. However, those that chose to expand Medicaid eligibility as part of the ACA need to meet specific federal requirements.

Prior to the enactment of Medicare, it was common for elderly Americans to be without health insurance. Just over half of Americans aged 65 and older had hospital coverage before 1963, with far fewer being insured for surgery or outpatient care (US Department of Health and Human Services, 2010a). Moreover, hospital coverage among seniors prior to 1963 varied by region, from a low of 43% to a high of 68% (Finkelstein, 2005). However, since Medicare was passed into law, almost all Americans aged 65 and over are covered for hospital and physician care.

---

2 In 1972 Medicare coverage was also expanded to include the disabled population as well as those with end-stage renal disease.

Another key result from the passage of Medicare was the desegregation of hospitals in the south of the United States. The country's history with regard to race is shameful; segregation of healthcare facilities is a prime example. According to Jill Quadagno (2000, p. 69),

Racial discrimination was as pervasive in the health care system as in other social institutions. Many hospitals maintained 'white' and 'colored' floors, labelled equipment by race, and reserved a certain number of beds for patients of each race. Throughout the South, black doctors were refused staff privileges and black students were excluded from nurse training programs. Fourteen southern states had constructed entire hospital systems based on the principle of 'separate but equal'. The problem was not confined to the South. In northern cities, too, many hospitals segregated black patients from white patients and discriminated against black health care workers.

Medicare changed this by tying programme funding to the integration of facilities – a requirement of the newly enacted Civil Rights Act of 1964. Within just six months of the programme's implementation, 'nearly every hospital in the country admitted patients regardless of race. Most racially segregated wards were dismantled, and hospitals began granting staff privileges to black physicians' (Quadagno, 2004, p. 178).

Passage of the Medicare legislation – which is Title XVIII of the Social Security Act, whose current title is 'Health Insurance for the Aged and Disabled' – was difficult. Proposals to cover seniors had been before Congress for more than a decade but did not make headway in part due to opposition from organized medicine [3]. Passage of the legislation did not occur until a number of compromises were made, including payments to hospitals based on their costs, payments to physicians based on their charges, and the use of private insurers to administer the programme. Eventually the federal government moved to enact payment reforms to control Medicare costs. In 1983 Congress adopted the diagnosis-related groups (DRGs) system for Medicare, which changed hospital reimbursement from a system based on costs to one involving a fixed prospective payment based on the patient's diagnosis. Then in 1989 Congress enacted a Medicare fee schedule for physicians in the form of a Resource-Based Relative Value Scale (RBRVS) to replace the previous charge-based system, with further controls being put on annual rates of increase in aggregate programme payments. The RBRVS system also aimed to reduce the gap in payments for provision of

3 For accounts of the history of Medicare, see Feder (1977) or Marmor (2000).

primary care services compared to specialist services (for more on payment mechanisms see Box 3.5).

One notable gap in Medicare benefits was outpatient prescription drug coverage. In 1988 the Medicare Catastrophic Coverage Act was signed into law. The law added drug coverage as well as other provisions related particularly to long-term care, but Congress repealed it just a year later. One reason was that the new benefit was to be funded entirely by Medicare beneficiaries. Many of them, however, already had supplemental prescription drug coverage through a former employer. There was also tremendous confusion about what the law did and did not cover (Rice, Desmond & Gabel, 1990).

Almost two decades later, in 2003, a drug benefit was successfully added to Medicare, effective January 2006. Beneficiaries obtain their drug coverage by purchasing it from private insurers, who compete for subscribers among Medicare beneficiaries. The benefit is subsidized in the order of 75% by general federal revenues.

2.1.4 *Health planning*

While the United States has dabbled in health planning activities – albeit far less than many other high-income countries – those involving regulation have been out of favour for the past three decades. If one defines the concept more broadly, to include public investments aimed at increasing the supply of selected services, however, then such activities have been more prevalent.

An early planning initiative in the United States was the Hill-Burton Act, which became law in 1946. It provided grants that allowed municipalities to build or expand hospitals until a particular bed-to-population ratio was achieved. In return, hospitals were required to provide a reasonable volume of services to persons unable to pay and to make their services available to all persons residing in the facility's area (US Department of Health and Human Services, 2010b). While the programme stopped providing funding in 1997, many hospitals are still required to continue providing charity care.

Certificate of need (CON) programmes were introduced in a number of states in the 1970s. These were designed to control hospital expenditures – primarily beds and equipment. They reached their peak soon after the passage of the National Health Planning and Resources Development Act

of 1974, which required the use of CON through the establishment of local Health Systems Agencies, which were administered by local boards with a majority of members representing local consumers (Starr, 1982). Originally, hospitals needed permission from the Health Systems Agencies for investments of greater than $100 000.

Most research has found that CON was not effective in controlling hospital spending. While in some areas the numbers of hospital beds grew more slowly than they might have otherwise, one spill-over was an increase in capital spending per hospital bed (Salkever & Bice, 1976). A major problem was that the Health Systems Agencies were local boards. Communities would tend to benefit from higher hospital spending (more jobs, better equipped hospitals) but would bear little of the costs since healthcare is largely paid for by public and private insurers (Rice & Kominski, 2014). Moreover, no funding was made available to carry out the plan (IOM, 1981; Hyman, 1982). The federal requirement that states employ CON was repealed in 1987, although most states (36 at the time of publication) still maintain a variety of CON or related regulations (NCSL, 2018a). Beyond CON, there has been little in the way of healthcare capital controls in the United States. In general, hospitals are not restricted by government in the purchase of medical equipment and capital expenditures.

There have been a number of initiatives to encourage providers to go into primary care or to provide services in underserved areas. One notable effort that began in the 1970s and still exists today is the National Health Service Corps, which provides scholarships and loan repayments for physicians who practise at approved sites such as federally supported health centres, rural areas, Indian Health Service clinics and public health department clinics.

2.1.5 *Recent organizational and delivery developments*

A number of innovative organizational forms of healthcare delivery were developed in the United States. HMOs are organizations that provide, or contract to provide, healthcare services on a largely prepaid basis to members through a network of providers. They existed in the United States for most of the twentieth century, although the term itself was not used until it was coined by Paul Ellwood in 1970. The first prepaid group practice was the Ross-Loos Medical Group, which began in Los Angeles, California,

in 1929, and provided prepaid care to about 2000 municipal employees. The largest of the early HMOs – and still the largest today – was Kaiser Permanente, which was started by industrialist Henry J. Kaiser and physician Sidney Garfield in the 1930s for construction, steel and shipyard workers in southern California.

While early HMOs had their own dedicated physician staff, in recent years the market has shifted to the practice association and network model – sometimes called an HMO without walls. Under these arrangements the HMO contracts with multiple medical groups and hospitals to provide services to enrollees. In most arrangements, all care except for emergencies must be provided by network providers, while in others (point-of-service plans) an enrollee can go out of the network but at a substantial out-of-pocket (OOP) cost.

HMO enrolment grew rapidly beginning in the 1980s, particularly with the rise of the practice association and network models, which unlike group and staff model HMOs tended to be for-profit organizations. This stemmed, in part, from the passage of the HMO Act of 1973, which among other things required that employers with more than 25 employees that offered health insurance include at least one HMO option if one was available in their geographical area. Since the late 1990s, however, the market share of HMOs has fallen substantially. One reason for this is a managed care backlash that occurred in the mid–to late 1990s, as patients rebelled against the tight restrictions that HMOs put on such things as seeking specialist care and hospital admission (Journal of Health Politics, Policy and Law, 1999), as well making it difficult for providers to be reimbursed for care received.

Since then, PPOs have come to dominate the private insurance market. PPOs contract with a network of providers but they tend to pay physicians on a (discounted) fee-for-service basis and generally make it easier to seek care outside the network, in particular for specialist services. In 2017, among insured employees, 48% were in PPOs and only 24% in HMO or point-of-service plans (Claxton et al., 2017). (Most of the remainder are in high-deductible plans.) The popularity of PPOs stems in large part from their flexibility: employers can design a health benefits plan tailored to their specifications, and patients can seek care from any provider they wish but pay less out of pocket when they use their PPO's network. Moreover, as HMOs removed many of their more onerous restrictions, their cost advantage over PPOs substantially declined (Hurley, Strunk & White, 2004). Finally, some

enrollees feel more comfortable when their providers do not have strong financial incentives to control the amount of services provided.

A more recent development is the accountable care organization (ACO). Briefly, ACOs are healthcare providers, often consortia of independent organizations, that work in concert to improve patients' health and reduce costs. The key element is coordinating patient care across a range of settings. Participating providers and organizations are rewarded by public and/or private payers with part of the savings that may accrue, as well as for quality improvement. ACOs are described in more detail in Box 3.3 in Chapter 3.

A final development over the past few decades has been the gradual movement towards the corporatization of medicine in the United States. Increasingly, hospitals, physician groups and insurers have been merging, thereby forming larger entities – and often becoming publicly traded – in part to take advantage of economies of scale but more often to increase their leverage in bargaining with other entities in the healthcare sector. To give a single example – trends in for-profit ownership in the United States – between 1980 and 2012 the percentage of for-profit organizations increased at the following rates:

- for-profit hospitals increased from about 10% to 20%
- HMO enrolment increased from about 10% to 65%
- for-profit home health agencies increased from less than 10% to 40%
- for-profit dialysis units increased from about 35% to 75%.

In contrast, the percentage of nursing home facilities that were for-profit fell slightly, although the figure remains nearly at 70% (Rice & Unruh, 2016).

2.1.6 *Comprehensive healthcare reform*

In March 2010 the United States enacted major healthcare reform. The ACA expanded coverage to the majority of uninsured Americans, through: (1) subsidies aimed at lower-income individuals and families to purchase coverage; (2) a mandate that most Americans obtain insurance or face a penalty; (3) a requirement that firms with over 50 employees offer coverage or pay a penalty; (4) a major expansion of Medicaid; and (5) regulating health insurers by requiring that they provide and maintain coverage to all

applicants and not charge more for those with a history of illness, as well as requiring community rating, guaranteed issue, non-discrimination for pre-existing conditions, and conforming to a specified benefits package. Most of the major provisions went into effect in 2014. A brief summary of the ACA is included in Box 2.2. Chapter 6 is devoted to the ACA and the specifics of the legislation are deferred until then.

Although the ACA did not result in universal healthcare coverage, it represents – along with Medicare and Medicaid – a major effort to move towards that goal. Efforts to provide comprehensive, national health insurance in the United States go back to the Great Depression, and nearly every president since Harry S. Truman – who held the position from 1945 to 1953 – proposed some form of national health insurance. Box 2.1 provides a brief summary of some of these efforts.

BOX 2.1 Efforts to provide universal health coverage in the United States

Prior to the enactment of the ACA, there had been a number of unsuccessful efforts to provide universal health coverage to the US population. These efforts date back to the early part of the twentieth century. They failed for a variety of reasons: strong opposition from interest groups such as the AMA; Americans' reticence to allow what they sometimes perceived as a 'government takeover' of the healthcare system; difficulties in reaching consensus even among groups supporting the concept; and problems in reaching a consensus in and between both houses of Congress and the president. This section provides a brief recap of some of these efforts. It is based on a number of sources: Altman & Shactman, 2011; Blumenthal & Morone, 2009; Johnson & Broder, 1996; Oberlander, 2003, 2012; and Starr, 2011.

The earliest efforts for universal coverage date back to the 1910s and were mainly spurred on by organized labour in the Progressive Movement. These efforts did not result in federal legislation; efforts were instead aimed at states, but they were unsuccessful everywhere. The movement was successful, however, in enacting state-based Workmen's Compensation laws that provided income when a worker was injured on the job. In part this was the result of timing: opponents of universal health insurance argued that America did not want to emulate Germany, its enemy in the First World War, nor should it follow a socialistic path that was argued by opponents to be akin to what was happening in Russia after the revolution. Equally important was opposition from key groups, particularly employers and insurers, who did not want to see an overly strong

federal presence in the private market. Interestingly, insurers did not sell health insurance at that time, but they did want to protect a related business – insurance for the costs of funerals.

The first real opportunity for a federal law came in the mid-1930s when the United States approved the Social Security Act, which provided old-age pensions and unemployment insurance. Some in the Roosevelt Administration thought this was an opportune time to provide health coverage to the population as well but it became clear that inclusion of health insurance was controversial and would put at risk passage of the old-age pensions and unemployment insurance. While there is disagreement among analysts as to how committed Roosevelt was to universal coverage, it is clear that the proposals faced strong opposition, particularly from the AMA. The AMA was quite blunt in equating support of national health insurance with communism but implicit were concerns that a federal programme would lead to budgetary authority that could result in tight fee controls and a movement towards prepaid group practice.

With Roosevelt's death in 1945, President Truman became the first president to actively champion universal coverage, believing that health insurance coverage was a basic right. A bill proposed by three members of Congress would have provided coverage to all Americans, not just workers. This effort also failed, with the bill not making it out of committee onto the floor of either chamber of the house as a result of a forceful campaign led by the AMA, but also because even though Democrats held the presidency and both Houses of Congress, legislation was blocked by a coalition of the Republicans and conservative Democrats from the southern states.

There was little movement towards universal coverage during the 1950s. Rather, there was tremendous growth in private health insurance provided through employers. There was, however, renewed interest in healthcare under the Kennedy and Johnson Administrations in the 1960s. This interest, however, never coalesced into a cogent proposal for universal coverage but resulted in the enactment of Medicare for the elderly (and later, disabled) and Medicaid for some of the poor.

In the early 1970s the Nixon Administration proposed a plan for healthcare coverage for the entire population. It included comprehensive benefits through an employer mandate, preserving private insurance companies, but including public coverage to replace Medicaid for the poor and others who could not obtain coverage. This effort was blocked mainly (but not entirely) by the left, particularly organized labour, which wanted to wait for a system that was more akin to a single-payer system. (Politically, that time has yet to arrive.) Moreover, labour objected to patient co-payments in the Nixon plan.

For nearly two decades thereafter there was little movement towards universal coverage. The last major attempt prior to the Obama Administration was that of President Bill Clinton, who proposed a comprehensive plan to cover the entire population.

The Clinton proposal was largely based on managed competition – that is, private insurers competing against one another. But the competition would be under the umbrella of newly created Health Alliances. These were to be government-sponsored consortia through which employers and employees enrolled for coverage provided by private insurers, and which collected and disbursed premiums and enforced various price and other regulations. The administration made a number of tactical errors, including honing the details of the proposal in secrecy and not involving Congress. Those factors, combined with opposition from some insurers and small businesses, doomed the proposal in 1994.

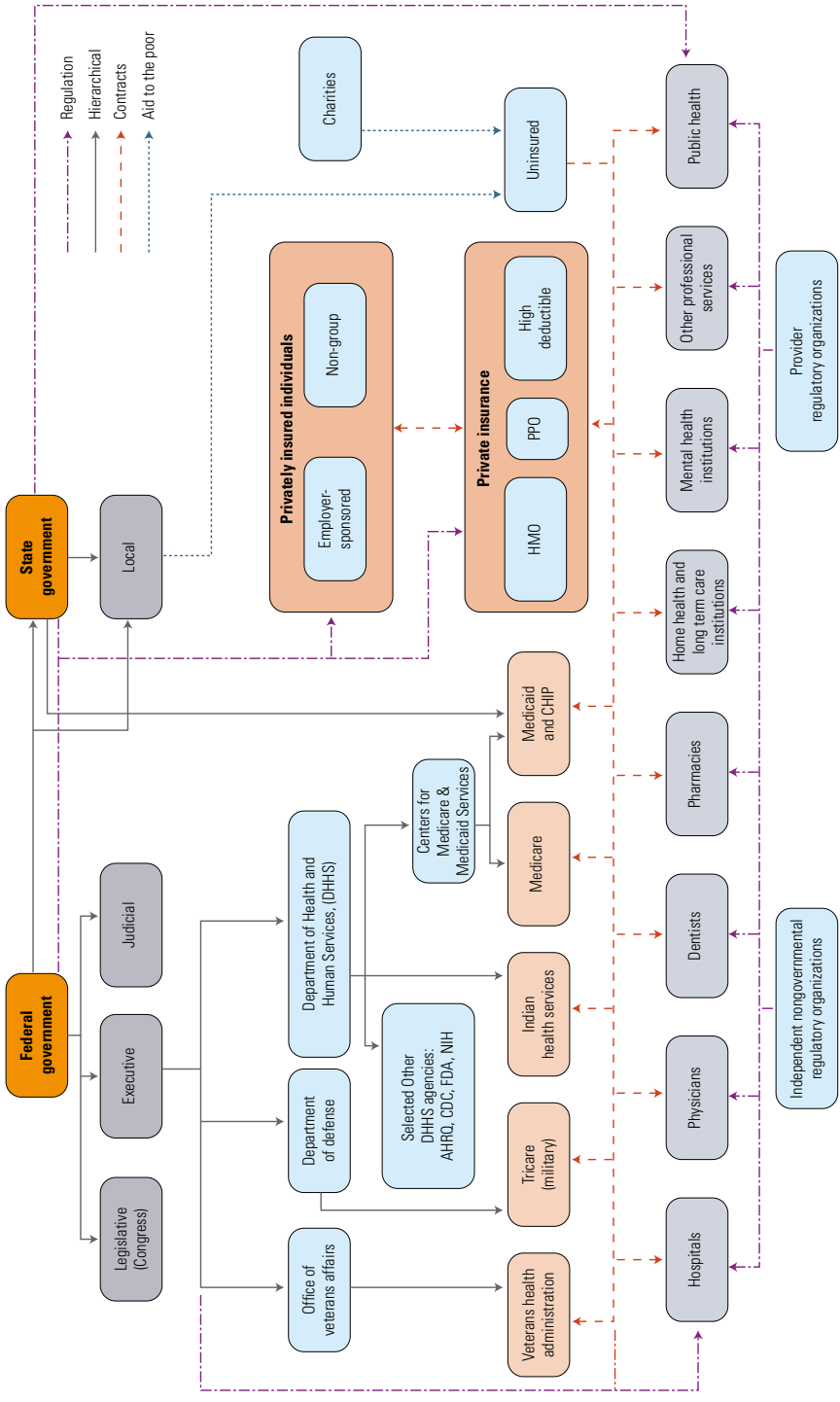
Universal coverage was not on the agenda again until the election of President Obama, and the subsequent passage of the ACA in 2010. A detailed account of the ACA is in Chapter 6. More details on US efforts to achieve universal coverage appear in an article by the authors and editor (Rice et al., 2018).

2.2 Organization of the healthcare system

2.2.1 *Overview*

In the US healthcare system public and private payers purchase healthcare services from providers subject to regulations imposed by federal, state and local governments as well as by private regulatory organizations. Fig. 2.1 illustrates the interplay between four main actors: (1) government; (2) private insurance; (3) providers; and (4) regulators, as well as the types of relationship that connect them. The Patient Protection and Affordable Care Act, more commonly referred to as the Affordable Care Act (ACA), signed into law on 23 March 2010, resulted in several significant changes in the US healthcare system (see Box 2.2 and Chapter 6 for more details). Fig. 2.1 shows what the US healthcare system looked like in 2020.

FIG. 2.1 Organization of the US health system in 2020



Source: Authors

Government, insurers, providers, and public and private regulators each play an important role in the US healthcare system. Government actors include those at the federal, state and local levels. Both the federal and state governments have executive, legislative and judicial branches (although the figure only shows this under the federal government). Under the executive branch of the federal government, the Department of Health and Human Services (HHS) plays the largest administrative role in the US healthcare system. HHS includes agencies such as the Centers for Medicare and Medicaid Services (CMS) that administer the public Medicare and Medicaid programmes, and the Children's Health Insurance Program (CHIP). Other selected agencies within HHS include the Agency for Healthcare Research and Quality (AHRQ), the Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA) and the National Institutes of Health (NIH).

The Office of Veterans Affairs (VA), which oversees the Veterans Health Administration (VHA) to provide care to military veterans, is a federal agency independent of HHS. The Department of Defense is in charge of providing healthcare to active duty military and their families through TriCare. The Indian Health Service is a federal-level health system, within the HHS, that provides health services to members of federally recognized tribes of Native Americans and Alaskan Natives.

Public purchasers include federal and state agencies. The public purchaser that spends the most is Medicare. The programme provides nearly universal coverage for Americans aged 65 and older, the disabled and those with end-stage renal disease. State governments, along with funds provided by the federal government, finance healthcare services through Medicaid and CHIP. Both programmes are state administered and primarily cover low-income families. Medicaid also covers disabled adults, long-term care services after individuals have used up their own income and assets, and, along with Medicare, low-income seniors (these programmes are discussed in more detail in Sections 3.3 and 3.4).

Both state and local government are also involved in healthcare in a number of ways that make it possible for low-income and other disadvantaged individuals and families to obtain care. These include such functions as operating public hospitals, providing medical and preventive services through state and local health departments and their associated clinics and community health centres, as well as other public health activities including regulating restaurant safety.

FIG. 2.2 Organization of the Department of Health and Social Services

Source: Data from US Department of Health and Human Services. Available at: https://www.hhs.gov/about/agencies/orgchart/index.html

In addition to government purchasers, private insurers and individuals also purchase healthcare in the United States. Private insurance falls predominantly into three categories: health maintenance organizations (HMOs), preferred provider organizations (PPOs) and high-deductible plans (see Section 3.5 for more details) (Claxton et al., 2019). The vast majority of Americans with private insurance obtain it through an employer, though 16.2% have individually purchased coverage. In 2016 there were roughly 28.2 million people living in the United States without any health insurance, constituting 8.8% of the total population (US Census Bureau, 2016a). Federal and state-based insurance marketplaces (also known as 'exchanges') began effective January 2014 under the ACA for individuals without access to employer-based insurance and small employers that choose to purchase coverage.

Health services for the uninsured and those on Medicaid are often provided by a safety-net system of public and community clinics, as well as by hospitals and physicians.

The categories of healthcare providers and services mirror those of other high-income countries and include hospital, physician, dental, prescription drug, home health and long-term care, mental health, other professional, and public health services. The ACA encouraged providers, organizing them into Accountable Care Organizations (ACOs), to share in savings they achieve in the Medicare programme. ACOs sharing responsibility for the health, provision of healthcare services and costs of Medicaid populations and those with private insurance also exist in the United States.

Regulation of the US healthcare system, which is discussed in more detail in Section 2.7, occurs at three levels: federal, state and private. Much of the regulation at the federal level comes under the HHS. Fig. 2.2 presents the organization of the regulatory bodies within HHS, which oversees programmes, issues regulations and carries out federal government policy on a number of healthcare and related matters.

BOX 2.2 The Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act (commonly abbreviated as the ACA) became law on 23 March 2010. It represents a comprehensive attempt to reform the US healthcare system. As such, this book refers to the law and its impact throughout. Chapter 6 is devoted to a comprehensive treatment. This box provides a brief overview.

The ACA includes numerous features affecting private and public insurance coverage, employers, providers and consumers. Its main provision – which, like many provisions, did not come into effect until 1 January 2014 – was expansion of private and public insurance coverage. The main features are as follows:

Private insurance coverage

- Substantial subsidies (on a sliding scale) towards the purchase of health insurance for individuals and families with incomes below 400% of the federal poverty level.[1]
- Beginning in 2014, a requirement that individuals and families have health insurance coverage. If they did not, they had to pay a penalty unless the lowest cost plan available to them had a premium that exceeded 8% of the person's income. This individual mandate was effectively repealed in December 2017, effective 1 January 2019. (Technically, the mandate was not repealed but rather the penalty for not having insurance was set to $0.) Thereafter the purchase of coverage is purely voluntary.
- The establishment of federal and state-based health insurance 'marketplaces' or 'exchanges', where competing insurers offer their products to individuals and small businesses. The states have much authority over how they regulate the insurance market. Health insurers offer a variety of specified benefit packages that must cover essential health services.
- A requirement that insurers provide a guaranteed issue of a policy to any applicant and to renew that policy. They cannot charge higher premiums based on health status or pre-existing conditions. Exceptions are that older enrollees can be charged up to three times as much as younger ones, and that smokers can be charged 50% more than non-smokers. Insurers are also prohibited from placing annual and lifetime limits on the dollar value of coverage.

1 In 2018 the federal poverty level was $12 140 for an individual and $25 100 for a family of four. It rises to $42 380 for a family of eight and $4320 more for each additional family member.

- A requirement that health insurers generally return 80% (individual and small group) or 85% (large group) of premiums in the form of health benefits.

Public insurance coverage

- In states that choose to accept federal subsidies (for the first three years at 100% of expenditures, then declining to 90%), Medicaid coverage is expanded to individuals and families with incomes at or below 138% of the federal poverty level.
- A provision that certain preventive services be provided with zero copayment.
- Gradual removal of the 'doughnut hole' for prescription drug coverage.
- Reduction of government payments to Medicare Advantage plans.
- Provision of bonuses to Medicare Advantage plans that achieve high-quality scores.
- Formation of a board that will make binding recommendations to contain costs (unless overridden by Congress) if fee-for-service Medicare costs grow more quickly than one percentage point above gross domestic product.

Employers

- A requirement that employers with 50 or more employees offer health insurance coverage. If they do not, they pay a penalty. While the individual mandate was effectively repealed effective 2019, the employer mandate is still in effect.
- Provision of tax credits to some small employers that offer insurance coverage.
- Imposition of an excise tax (called the 'Cadillac Tax') for particularly generous employer health insurance coverage: those policies whose value exceeds $10 200 for individual and $27 500 for family coverage. Congress has, however, repeatedly delayed its implementation, and ultimately repealed it in December 2019.

Providers

- Allowing providers to organize into Accountable Care Organizations that will share in savings they achieve in the Medicare programme.
- Establishment of a pilot programme to develop 'bundled' payments for entire episodes of care.

- Link Medicare payment to hospitals and physicians on meeting specific performance targets.
- An increase in the number of positions for physicians working in primary care and in rural and other underserved areas, partly through scholarships and loans.
- Various forms of support to encourage more nurses, including additional federal support for training programmes, grants for loan repayment and establishing a career ladder for nursing.

The public

- An increase in taxes on unearned and investment income, as well as on payroll taxes earmarked to Medicare, for high-income individuals and families.
- A requirement that certain restaurants and vending machines post nutritional content such as calories.
- Making it easier for consumers to compare and choose health insurance policies by providing insurance information in a standard format.

2.2.2 *Federal and state government organizations*

The President names the heads of major health agencies at the national level with the consent of the Senate. Governors play the same role in their respective 50 states. These individuals set the agenda, make policy and supervise the implementation of health laws and administrative orders. When a new President is elected, substantial changes may take place at the highest level of leadership in US public health sector organizations. New offices and administrative agencies are sometimes added, and, on occasion, some agencies are eliminated. This reflects the different policy priorities of the newly elected President. Career civil servants are numerous and carry out most of the work. They may serve under department or division heads with quite different priorities over the term of their employment. Congress can also play an administrative role as a legislative body. Those employed in various branches of government receive instruction from the members of Congress who oversee their work. This system works the same way at the state and local levels, where a new governor, new state legislature, new mayor or new local governing board can initiate substantial change.

HHS is the key health agency in the United States. It has broad responsibilities for carrying out the instructions of the Congress and the administration regarding finances, planning/coordination, administration and regulation, as well as the provision of health services. The agency's head carries the title of 'Secretary' and is named by the President with the consent of the Senate. He or she also sits in the President's Cabinet. HHS has a budget of about 28% of all federal outlays with over 80 000 employees (OMB, 2018). Its various components administer grants and provide/purchase health insurance for about one-third of the population. HHS coordinates and monitors the performance of many state and local health organizations. The financing for many programmes that are jointly administered at the federal government, state and local level flows through HHS. The department includes more than 100 programmes across 11 operating divisions, covering a wide spectrum of activities. These programmes not only provide services nationwide but also enable the collection of national health and other data (US Department of Health and Human Services, 2018).

Key government organizations within HHS include the following (see Fig. 2.2):

- CMS is by far the largest agency in HHS because it administers the Medicare, Medicaid and CHIP programmes, which cover about 140 million Americans. It has about 6000 employees and an annual budget on various coverage programmes and agencies of approximately $1 trillion in 2018.
- AHRQ focuses on comparative effectiveness, quality improvement and safety, health information technology, preventive and care management, and healthcare value. It is generally viewed as the main federal government agency that focuses on health services research, although many other organizations address health services. As of 2018, AHRQ had a budget of approximately $321 million.
- The CDC works with partner organizations to accomplish its mission through such areas as health monitoring, prevention research, promotion of healthy behaviours, and fostering safe and healthful environments. Its 2018 budget was nearly $8.3 billion.
- The FDA is responsible for ensuring the safety, efficacy and security of human and veterinary drugs, biological products,

medical devices, food supply, cosmetics and products that emit radiation. It also regulates tobacco manufacturing, marketing and distribution, with a special interest in reducing tobacco use by minors. Its 2018 budget was approximately $5.4 billion.

- The National Institutes of Health (NIH) fosters fundamental discoveries, developing resources to prevent disease and promoting scientific integrity. NIH has within it about two dozen institutes and centres, examples of which are the National Cancer Institute, the National Institute on Aging, the National Heart, Lung, and Blood Institute, and the National Library of Medicine. Its 2018 budget was approximately $36.2 billion.
- The Indian Health Service, also under HHS, serves nearly 2 million individuals with an annual budget of about $6.1 billion in 2018, and is funded through federal government general revenues.

Congress is also advised by several federal organizations, including the Congressional Budget Office (CBO) and Medicare Payment Advisory Commission (MedPAC). The CBO produces non-partisan analysis to Congress to support its budget process. CBO reports provide independent analysis to inform the health policy process. MedPAC is an independent body that advises Congress on payments to private health plans, fee-for-service providers, and access and quality of care issues related to the Medicare programme.

The VHA is operated by the US Department of Veterans Affairs. It covers 9 million veterans at 1200 sites across the country, including approximately 170 medical centres, employing more than 300 000 people, and including over 100 academic health systems (US Department of Veterans Affairs, 2018). Spending on VHA medical care exceeded $70.6 billion in 2016 and is covered through general federal government revenues. TriCare – financed through federal general revenues – pays for civilian health services used by active military and their families and some retirees, serving almost 10 million people. Generally, services must be received through the programme's managed care networks, and require modest premiums and co-payments. Total spending on military care was about $60 billion in 2016 (US Department of Veterans Affairs, 2018).

Public health organizations exist at every level: national, state, county and city. Public health functions are carried out by administrative units in diverse parts of the governmental organizations. The CDC, an HHS

agency, is a principal component. Another example is the Commissioned Corps of the United States Public Health Service, headed by the Surgeon General. The public health services are organized as a military unit with a Commissioned Corps of 6500 that includes uniformed service and rankings that parallel military lines. Members of the United States Public Health Service Commission Corps serve throughout the various offices and agencies in HHS, as well as the Environmental Protection Agency and the United States Departments of Defense, Agriculture and Homeland Security.

Each of the main public health systems in the United States has a complex set of structural arrangements. Some health programmes, such as Medicaid, are organized and administered differently in each of the states, which makes it difficult to cover them in any depth here. Medicare is examined in some detail because it is a national programme.

The Social Security Administration (SSA) makes the initial determination as to whether or not an individual who applies for Medicare fulfils the eligibility requirements. The SSA also arranges for premiums to be withheld from the participant's Social Security benefit cheque and determines an individual's premium level, as these differ depending on the beneficiary's income. In addition, the SSA maintains the database for Medicare in conjunction with its own records. The Internal Revenue Service (IRS), which is part of the United States Department of the Treasury, collects Medicare payroll taxes from workers and their employers. IRS data from an individual's tax return are used to determine eligibility for income-adjusted Medicare subsidies (Klees, Wolfe & Curtis, 2009).

One critical issue is that US government healthcare system organizations overlap, and programmes between the various actors in Fig. 2.1 sometimes duplicate one another. This can result in both care coordination problems as well as gaps in services, in particular coverage areas and redundancies in other areas, which can be confusing to patients and providers.

2.2.3 *Private organizations*

Purchasers and providers have national-level professional organizations that represent their common interest, operate as spokespersons for them and lobby policy-makers in Congress to advance their respective policy preferences. For example, America's Health Insurance Plans (AHIP) is a national organization that represents about 1300 private for-profit companies

that provide health insurance coverage, dental insurance, long-term care insurance and disability income insurance, as well as a variety of other insurance products.

Each payer listed in Fig. 2.1 has a different organizational structure, though they share some organizational characteristics. Most private sector employers that offer health insurance are publicly traded. They have corporate structures and are subject to the accounting and reporting obligations of the Securities and Exchange Commission (the stock exchange). Employers that qualify as private companies (not listed on the stock exchange) have greater freedom and fewer reporting obligations than public companies.

Under ACA's employer mandate implemented in 2014, employers in the United States with 50 or more employees are required to provide health insurance for their employees. Most very large employers, public or private, 'self-insure', which means that they offer health insurance to their employees directly rather than purchasing it from an insurance company. They may hire an outside agency or an insurance company, sometimes referred to as a third party administrator, to manage their company health insurance plan. Companies that self-insure assume the financial risk, but they may purchase insurance to cover any employees that incur large medical costs, a practice that is referred to as reinsurance.

In addition, there are some significant private or independent organizations that play an important role. For example, the National Committee for Quality Assurance (NCQA) measures and reports on quality of care of those physicians, hospitals and health plans that pay to be evaluated. Another is the Joint Commission that accredits and monitors the quality of healthcare organizations.

2.2.4 *States*

The 50 state government organizations are major actors in the US healthcare system. Under the Trump Administration they received even more responsibilities. They share important roles with the federal government in finance, planning, administration, regulation and the provision of healthcare through Medicaid, mental health services, public hospitals and health departments (with the cities and counties). They monitor and enforce environmental regulations, some of which are issued by the federal

government. They license physicians, nurses and other healthcare workers and regulate the sale of health insurance.

States accomplish their roles in the healthcare system through various organizational structures. Most states have a Division of Insurance as well as a Department of Health, Human Services or Social Services. These administrative departments are generally organized much like their equivalents on the federal level. Most states, unlike the federal government, may not legally run a budgetary deficit and this affects how they fulfil their functions. States emphasize healthcare to varying degrees, which makes for wide variations between the states in health services offered to citizens.

Medicaid is jointly funded by the federal and state governments. Although administered by the states, numerous federal requirements apply, and Medicaid eligibility varies widely across the states.

2.3 Decentralization and centralization

In the United States decentralization and centralization operate through federalism. Federal government and state responsibilities were enumerated in the US Constitution. The resulting federal system sets the stage for the organization of the health sector and defines the respective responsibilities of the states and the federal government. They share many powers, with primacy shifting between them over time. There are advantages and disadvantages to centralization and decentralization as played out under the auspices of US federalism. In theory, the 50 states innovate and test policies that may later be adopted by the federal government. But the federal system has given rise to inequality of services across the different states.

Decentralization in the United States is complicated and includes devolution, delegation and privatization. The organization of the US healthcare system is influenced by the balance of power between the federal government and the states. In addition, coordination among the centres of authority, administrative/financial capability of responsible actors and the regulatory framework for public–private partnerships complicate system organization. An explanation of the complex and varied history of US federalism is helpful in understanding current trends in centralization and decentralization.

2.3.1 *History and evolution of federalism*

The US Constitution defines the structure of American federalism. The federal government and the states have specific responsibilities designated to them by the 10th Amendment to the US Constitution, ratified in 1791 (Weissert & Weissert, 2006). In addition, a 'residual powers clause' in that amendment mandates that 'the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people'. However, understanding exactly what this means is subject to legal debate (Weissert & Weissert, 2006, p. 247).

Throughout US history, power has shifted back and forth between federal and state governments. Centralization followed the American Civil War that freed the slaves (1861–1865), as the federal government emerged more powerful. The Reconstruction Era (1865–1877) followed, with the federal government attempting to not only rebuild the Southern Confederacy states, but also transform the culture of these states that lost the Civil War. Government by the US Army was imposed, temporarily, until elections – which included former slaves – could be organized. These and other Reconstruction Era policies were met by a backlash after 1877. Subsequently, governmental decentralization, which increased the power of the states, eventually led to the segregation and disenfranchisement of African Americans, mainly but not entirely in the South. This continued for almost a century and arguably still exists today. The pendulum of federalism changed with the New Deal (1933–1936), in President Franklin D. Roosevelt's first term. Centralization resulted as the federal government took action to meet the challenges of the Great Depression. The civil rights movement of the 1960s also brought major change (Baker, 2007). The Trump Administration, along with previous Republican-led ones, generally favoured a reduced role for the federal government.

2.3.2 *Federalism in the health sector*

States play an important governance role in the health sector. To review, states fund and manage many public health functions, pay part of the cost of Medicaid and mental health care for the poor, support public hospitals and health departments, and monitor environmental protection. States set the rules for health insurance policies that are not covered by

self-insured employer plans; self-insured employers are regulated by the federal government under the terms of the Employee Retirement Income Security Act (ERISA), which pre-empts state law (Section 2.7.1). States may, if they choose, regulate increases in health insurance rates (Weissert & Weissert, 2006, p. 236). State boards of health and state public health advisory boards provide important functions in about half the states. The role of these agencies varies from that of a quasi-legislative organization to that of quasi-judicial 'enforcement of rules or regulations through hearings and appeals'. In some cases, they hold agency oversight functions and the 'authority to appoint or remove the state health officer, or make binding agency personnel, fiscal or organizational decisions' (Hughes et al., 2011, pp. 37–8).

States help to educate, provide credentials and regulate medical care providers. The responsibility for the licensure of practitioners is delegated to the states under the terms of the Constitution's 'residual powers clause'. National-level, nongovernmental professional associations set standards for the education and certification of practitioners. This serves to counterbalance the power of the individual states to some degree. These functions of education and providing credentials represent a type of reassignment of what is, in many countries, a government function. This transfers power from public to private non-profit entities and voluntary organizations like, for example, the American Medical Association, which set their own standards for admission (Bauchner, Fontanarosa, & Thompson, 2015).

2.3.3 *Weighing decentralization and centralization*

The performance of the states in terms of their policy-making capacity in the health sector has improved over time (Weissert & Weissert, 2006, p. 234). However, the states have been challenged by repeated recessions and the unpredictability of their income and sales-based revenue sources. Most state constitutions prohibit running a budget deficit, while the federal government has no similar constraint. This means that many states have difficulty managing their respective healthcare systems, even though, in theory, they have the power to raise and spend additional revenues on their own (Weissert & Weissert, 2006, p. 251).

The argument in favour of decentralization is that the states know the needs of their local citizens better than the federal government. Indeed,

the United States is a large country with a population in 2017 of about 325.7 million. Size makes centralization and coordination difficult. In addition, regions vary widely with respect to lifestyle health variables and this complicates national-level policy-making (Krueger, Tajudaullah & Rosenau, 2009). At the same time, decentralization in the United States leads to greater inequality between the states. Historical factors, reviewed above, explain some of the variations in state policies – for example, solidarity and fairness (Chen & Weir, 2009). Today, the Medicaid programme is an example of how inequality can develop in decentralized programmes. There are significant differences in mortality amenable to healthcare from state to state. Top performing states in 2004–2005 registered 64 deaths per 100 000 population that were attributed to causes amenable to healthcare. The lowest performing state exhibited a loss of 142 lives per 100 000 population (McCarthy et al., 2009). Some states do as well as many of the top high-income countries on health indicators, while the lowest performing states rank far below (Nolte & McKee, 2008).

2.3.4 *Federalism and the ACA*

The collaboration between the federal government and the states regarding the ACA is an example of a work in progress for federalism; it is an attempt to balance decentralization and centralization. It illustrates the open character of US federalism in that it permits those states that wish to do so to exceed the federal requirements at the same time that exemptions and waivers have been agreed upon for states that wish to avoid participation in federal programmes (Conlan & Posner, 2011). In many cases, the states are allowed to use their own methods to achieve or exceed federal goals.

One implicit federal goal of the ACA is to reduce disparities between the states in the health sector. The federal government sets the minimum eligibility requirements for programmes such as Medicaid that the states must respect. There is some devolution of power to the states for certain forms of operating authority such as setting up and managing the health insurance marketplaces, determining what constitutes essential benefits for health plans and monitoring insurance premiums. The HHS is instructed, under the terms of the ACA, to monitor the performance of the states and to intervene should a state be unable or unwilling to provide services, such

as a functioning health insurance marketplace where individuals and small businesses can purchase insurance. The default in cases where states fail to set up a marketplace is that the federal government will provide one for those who live in these states. Some state political leaders view the ACA as an effort toward recentralization.

2.3.5 *States as innovators for the federal level*

The states are said to serve as policy laboratories for the federal government. In this perspective, policy innovations at the state level can inspire federal legislation that is then adopted at the national level and applied to all the states (Weissert & Weissert, 2006, pp. 276–8). For example, the use of DRGs by the Medicare programme was originally based on a similar system first implemented in New Jersey. One prominent example of state policy that appears to have influenced the ACA is that of Massachusetts. In 2006 Massachusetts adopted legislation to provide near-universal health insurance for state residents (Weissman & Bigby, 2009).

Others argue, however, that state policy innovations are of limited value to the federal government because states differ so much (Oberlander, 2006). In addition, to be relevant for the federal level, state experiments must stand the test of time. Some state-level policy experiments and demonstration projects based on Medicaid waivers were financed by the federal government, but few have led to federal legislation. Empirical research suggests that between 1973 and 2002 the House of Representatives did not pay much attention to state innovations (Volden & Wiseman, 2011).

Policy innovation opportunities also exist for states via the Section 1115 waiver programme. Section 1115 of the Social Security Act allows the Secretary of Health and Human Services to approve waivers for states to deviate from implementing policies governing programmes such as Medicaid and CHIP as written under current federal law, in order to test alternative or innovative approaches to administering public assistance programmes. Each administration has discretion to shape the approval and priority process for waivers, but that authority is still subject to constraints dictated by the Medicaid programme purposes and priorities that Congress codifies into federal law (Musumeci et al., 2018). These waivers are also referred to as 'demonstration' projects, as the idea is that if states demonstrate in a waiver

that they are able to improve the Medicaid programme, without adversely affecting the basic benefits that Medicaid covers and remaining budget neutral, the federal government may adopt such changes nationally.

Priorities for approving Section 1115 waivers vary across presidential administrations. Under the Trump Administration, the policy priorities for 1115 demonstration projects included imposing eligibility and enrolment restrictions for adults covered under the ACA's Medicaid expansion waivers, providing incentives for engaging in healthy behaviours, and expanding access to substance use and other behavioural health services. In 2019, 38 states had at least one 1115 waiver approved, with many of these focusing on changing the Medicaid delivery system to respond to public health crises such as the epidemic of opioid abuse in which Medicaid covers 40% of US adults with an opioid use disorder. The 1115 waiver programme has allowed states to expand behavioural health access by increasing the supply of residential treatment for substance use disorder, enhancing provider payments for substance use disorder or mental health treatment, expanding of community-based benefits to increase availability of outpatient treatment, and increasing the ability of providers to prescribe medications to treat addictions in Medicaid patients (Kaiser Family Foundation, 2019a).

2.4 **Planning**

2.4.1 *Overview*

There is a range of public and private organizations that undertake planning relevant to health systems in the United States. In general, extensive planning by the public sector is rare. However, planning for emergencies and natural disasters is carried out in both the government and the private sector. The CDC plans for national and international responses to public health emergencies, a recent example, of course, being the novel coronavirus, Covid-19. In some cases, government organizations formulate and publish a plan for action to meet public health needs. State and local governments accomplish much of the health sector planning. The United States participates in international health plans.

2.4.1.1 Health sector planning by the public and private sectors

As in other countries, planning in the US health sector is not just a government activity: private corporations, public–private partnerships and nongovernmental organizations (NGOs) all engage in planning activities, internal to their organizations, to some extent. Coordinated health planning by various players/actors as outlined in Fig. 2.1 is not highly developed. In part this reflects the pluralist and market-oriented nature of the US healthcare system. Each system in Fig. 2.1 generally functions independently when it comes to planning, and it does so within its designated mandate. While government organizations may have elaborate internal planning for future activities, coordination between national programmes – for example, the VA and Medicare – receive less attention. Planning at the federal government level is also a matter of navigating within and between state systems.

Planning by private corporations is important in the health sector in the United States. It takes place at the level of the business itself, with the goal of ensuring financial viability. The private sector innovates in ways that are not always available to government. For example, in an effort to reduce costs, private US insurers have experimented with managed care, higher deductibles, consumer-oriented and directed health plans, and even payment for services abroad (Mexico). On the other hand, the fact that insurance and accreditation are state-level responsibilities discourages planning across state borders.

Business planning involves attaining efficiency within the private sector and the failure to plan efficiently may lead to bankruptcy and dissolution of the private corporation. Corporate planning necessarily focuses on fiduciary responsibility to shareholders rather than accountability to patients and society. Government planning involves direct intervention whereas the private sector does so to a far lesser extent. However, private planning is not without constraint from regulatory agencies.

Government and the corporate sector do not formally coordinate their activity on the basis of a comprehensive national plan in the health sector but outsourcing means that they work together indirectly. For example, Medicare delegates many responsibilities to private contractors, which undertake substantial planning activity.

Government planning receives more attention here than private sector and corporate planning because more is known about it. Planning in the corporate sector is often proprietary and concerns about competitors obtaining proprietary information can discourage transparency.

2.4.1.2 Stated objectives of the health system

The United States does not have a single national health policy act. The HHS has set national voluntary objectives in the Healthy People Initiative. It is a set of ideal objectives that began in the late 1970s. Every 10 years the Department develops and publishes a list of goals for the US healthcare system and evaluates progress over the previous 10 years. This section reviews the most recent document, *Healthy People 2020*. At the time of writing the HHS has developed a framework for *Health People 2030* but the report had not yet been issued as public comments on the proposed 2030 objectives were still being solicited. *Healthy People 2020* was unveiled in December 2010 by President Obama's Secretary of HHS. It has four overall goals relating to higher quality and longer life, health equity, improving social and physical environments, and promoting health behaviours (US Department of Health and Human Services, 2011a).

To evaluate the country's subsequent success in meeting the goals, system performance is divided into 42 topic areas. These are listed in Table 2.1. These range from prevention and behaviours (e.g. nutrition and weight status, physical activity, tobacco use) to particular diseases (e.g. cancer, heart disease and stroke, HIV) to age groups (e.g. early and middle childhood, adolescents, older adults) to more macro targets (e.g. educational and community-based programmes, environmental health, social determinants of health, global health).

Within each of these topic areas, *Healthy People 2020* sets specific objectives. For example, there are 20 sets of objectives related to cancer. One of them is to reduce invasive uterine cancer rates by 10%, from 7.9 new cases per 100 000 women in 2007 to 7.1 new cases by 2020. In the area of nutrition and weight status, one of the 22 sets of objectives is to increase the percentage of schools that do not offer sweetened drinks to students from 9.3% in 2006 to 21.3%.

TABLE 2.1 *Healthy People 2020* topic areas

Access to health services	HIV
Adolescent health	Immunization and infectious diseases
Arthritis, osteoporosis and chronic back conditions	Injury and violence prevention
Blood disorders and blood safety	Lesbian, gay, bisexual and transgender health
Cancer	Maternal, infant and child health
Chronic kidney disease	Medical product safety
Dementias, including Alzheimer's disease	Mental health and mental disorders
Diabetes	Nutrition and weight status
Disability and health	Occupational safety and health
Early and middle childhood	Older adults
Educational and community-based programmes	Oral health
Environmental health	Physical activity
Family planning	Preparedness
Food safety	Public health infrastructure
Genomics	Respiratory diseases
Global health	Sexually transmitted diseases
Health Communication and Health Information Technology	Sleep health
Healthcare-associated infections	Social determinants of health
Health-related quality of life and well-being	Substance abuse
Hearing and other sensory or communication disorders	Tobacco use
Heart disease and stroke	Vision

Source: US Department of Health and Human Service, 2011a

There is no dedicated funding to meet the Healthy People objectives. They are to be met with existing (and future targeted) funds, which are often considerable. For example, for cancer, the National Cancer Institute – part of the NIH – had funding of almost $6 billion in 2019. This is augmented by spending from a number of other federal agencies as well as private philanthropy.

2.4.1.3 Ambivalence about planning

Comprehensive, coordinated decision-making and system-level planning are not widespread in the United States for a variety of reasons (Wildavsky, 1973; Friedman & Friedman, 1990).

Compared to other countries, there is little coordinated system-level planning in the United States. Policy-makers associate planning with a comprehensive method, rather than the incremental one they prefer. The conviction is widespread that incrementalism, defined as the 'successive limited extensions of past approaches', is the best way to proceed (Lindblom, 1959; DeSario, 1982, p. 172). Planning also interferes with the give and take of behind-the-scenes negotiations that typically go into formulating policy in the United States (Lindblom, 1959; Wildavsky, 1973). The role of active stakeholders in the US policy-making process constitutes a subtle source of interference with planning processes and funding decisions (Raab, 1981). Minimalist planning also reflects public distrust of the federal government and confidence in markets as an appropriate nongovernmental mechanism or substitute for planning.

Finally, little of the planning activity in the public sector is highly coordinated with planning in the private sector to address major healthcare system concerns, such as national healthcare costs or the social determinants of health. There is no national, evidence-based plan for action in the US health sector. The absence of much planning has consequences. For example, 'providing and paying for long-term care in the United States reflects piecemeal development history and shared federal-state responsibility. The result can be confusion among patients and providers, amid seemingly illogical patterns of insurance coverage and available services' (Ng, Harrington & Kitchener, 2010, p.1).

2.4.1.4 Minimalist planning in the United States

The human resources area is an example of minimalist planning in the US healthcare system. Given the private ownership and competition-based model of provision in the US healthcare system, the number, type and location of health facilities, beds and expensive technology are initially determined by private sector actors, based on their estimates of their ability to make a profit or, in the case of non-profits, to cover their costs and generate a surplus. Local and state governments influence the supply of health providers because they control licensing and permits. It is also difficult for states or the private sector within a federal system to plan for human resources because of employment mobility.

The absence of societal level health planning sometimes leaves rural areas and underserved inner cities without necessary services, while there may be an excess of services available in affluent urban areas. Public sector options sometimes cover indigent care with public and federally qualified clinics. The ACA, however, includes provisions to provide more medical and surgical residency positions in underserved areas, as well as increasing the training of nurses while also encouraging them to relocate to underserved areas.

Some government organizations do plan improvements for the US healthcare system. In 1996 the Task Force on Community Preventive Services was set up by HHS to assess which community-based health promotion and disease prevention interventions were empirically viable and which were not. The CDC was the HHS agency that provided technical and administrative support for this Task Force (Truman et al., 2000). The website of the Community Preventive Services (https://www.cdc.gov/tobacco/stateandcommunity/comguide/index.htm) remains a resource for community planning today but it does not have systematic funding to reinforce community efforts.

Although government agencies plan, not all of them have the power to finance and implement the plans they systematically develop. Examples are discussed below. Again, emergency and natural disaster plans are an exception where financing and implementation are more likely to be assured.

Nongovernmental bodies seek to influence public opinion and attentive policy-makers who are open to suggestions for policies in the health sector, but they do not have the capacity to implement change. When a problem is identified, a task force may be formed. Sometimes research is commissioned,

and study results are made public. In some cases this research is undertaken by NGOs such as the National Academy of Medicine (previously, the Institute of Medicine (IOM)). An example of such documents was published by the Institute of Medicine in 2000 about the need to pay more attention to safety and reduce errors in the US healthcare system. Recommendations for changes were formulated and have had an important influence on policy and led to measures being taken to reduce errors (Kohn et al., 2000). In 2009 the Institute of Medicine published an influential report about the consequences of uninsurance.

2.4.1.5 Planning for emergencies and natural disasters

In cases where the public health consequences are serious, planning by governmental bodies is well supported by the public. Examples include times of war, epidemics, national security situations, terrorism and natural catastrophes. Natural disasters and emergency preparedness planning receive quite a bit of attention. The CDC's grant programme titled 'Preparedness and Emergency Response Learning Centers' is an example, whereby university-based schools of public health are funded to develop and train the public health workforce at the state and local level as part of a national plan to ensure that national security needs are met in times of emergency (CDC, 2010). AHRQ received funding from the HHS's Office of the Assistant Secretary for Preparedness and Response. It prepared and distributed guides to hospitals so that they may plan, conduct and evaluate exercises to prepare for emergencies. Its mission was to produce 'evidence to make health care safer, higher quality, more accessible, equitable, and affordable'. But too often emergency preparedness planning takes place only after a tragic system failure, such as that of Hurricane Katrina in New Orleans in 2005, where nearly 2000 people died. Coordinating between federal, state and local governmental entities adds to the challenge of planning.

2.4.1.6 State and local planning

Considerable planning activity takes place at the state or community/local level. Many of these programmes are heavily subsidized by federal government. Some state governments have focused more on planning than

others. One popular method for designing and implementing large-scale health planning is the State Health Improvement Plan (SHIP) initiative, which is required for state health departments hoping to gain national accreditation from the Public Health Accreditation Board. Creating a SHIP requires the completion of an initial State Health Assessment (SHA) in order to identify priorities, stakeholders, collaborators and strategies to improve population-level health within a state.

In 2014, 25 US states had a SHIP either completed or in progress, with variation in the health priorities identified, the partners involved in implementation and the timeframe for assessing health improvement. Many states also require that this version of a strategic health plan be renewed and re-evaluated periodically to best meet current, pressing health goals (Marshall et al., 2014). For example, Oregon's SHIP cycle is four years, and the 2015–2019 strategic plan included seven priority areas sourced from the state health indicators on which policy-makers saw need for improvement, such as preventing and reducing tobacco use, improving oral health and slowing the rising rate of obesity. Likewise, Pennsylvania created a five-year SHIP (2015–2020) that focused on three top initiatives based on the most urgent needs of the current population: addressing higher-than-average rates of obesity among adults and children, increasing access to primary care in many communities, and addressing the substantial burden of unmet need for mental health and substance abuse services (Pennsylvania Department of Health, 2016).

States have also focused their planning efforts with assistance from federal grants through funding mechanisms such as the State Innovation Models (SIM) grant provided by the Centers for Medicare and Medicaid Innovation (CMMI). The CMMI offers these innovation awards to states committed to transforming their health systems via new payment and delivery system models, to benefit recipients of public programmes such as Medicare, Medicaid and CHIP. New York was awarded $100 million in 2014 to expand a medical home model for its Medicaid enrollees, value-based payment models and primary care capacity. As part of the SIM award, New York also aimed to create an all-payer claims database and develop the nation's first state health information exchange (New York State Department of Health, 2018). In 2015 the District of Columbia received a SIM grant from the CMMI to redesign care delivery and reduce healthcare disparities in the following ways: improving the value of the care traditionally high-cost, high-need consumers receive, improving health equity by addressing

the social determinants of health, and making the healthcare system more accessible and user-friendly (Department of Health Care Finance, 2016). These examples illustrate the range of strategies and tools available to state policy-makers to reform public coverage programmes and private delivery systems to meet the needs of their individual populations.

2.4.1.7 The role of the United States in international health planning

The United States has, in the past, played a substantial role in managing and coordinating health-related international development assistance through governmental and nongovernmental organizations. On the government side, an example is the World Bank, where the president of the organization historically has always been an American as a result of the country being the largest shareholder. The US has also been the largest contributor to the World Health Organization (WHO), although at the time of writing this was no longer the case after the Trump Administration announced in May 2020 its plans to suspend contributions due to unhappiness with the Organization's response to the Covid-19 pandemic (Politico, 2020).

The United States has also participated in international health planning through the United States Agency for International Development (USAID). A 2017 reorganization of the US National Security Council placed the USAID Administrator as a permanent member of the National Security Council. USAID was established in 1961 with the passage of the Foreign Assistance Act. It focuses on investments to provide assistance for basic human needs, including food, nutrition and health. Its staff operate in more than 100 countries. Programme areas for food and nutrition target food security, agricultural research and development, food assistance, and expanding agricultural markets and trade. USAID also invests in advancing water supply and hygiene. Global health programme areas include family planning, HIV/AIDS, health systems, malaria, maternal and child health, neglected tropical diseases, nutrition, pandemic influenza and tuberculosis. USAID goals for global health are to reduce maternal mortality by 30%, reduce under-5 child mortality by 35%, prevent 54 million unintended pregnancies, and reduce the burden of malaria in Africa by half. In 2010 the top 20 countries given aid from USAID received $10.5 billion dollars in assistance, including $4 billion to Afghanistan and Pakistan. At $6 billion, health was the largest sector of USAID investment. Much of its assistance

flows through NGOs in addition to foreign governments. In 2017 USAID's mission statement was changed, in part, from 'to end extreme poverty' to 'reduce poverty, strengthen democratic governance, and help people emerge from humanitarian crises and progress beyond assistance'.

With the goal of eradicating HIV/AIDS, tuberculosis and malaria, in 2008 the United States under President George W. Bush authorized $48 billion dollars under the US President's Emergency Plan for AIDS Relief (PEPFAR). PEPFAR's targets for 2010–2014 included preventing 12 million new HIV infections, training 140 000 new healthcare workers to strengthen foreign health systems, and providing direct support for more than 4 million people on HIV/AIDS treatment. In 2009, under President Obama, the Obama Global Health Initiative was created to move US investments away from targeting diseases and towards developing international health systems. This initiative established a separate office with a budget of $63 billion dollars over six years – $51 billion of this total was to further support PEPFAR. In 2012 this office was disestablished and redistributed under USAID, the CDC and the Office of the Global AIDS Coordinator.

In addition to government efforts, there are numerous NGOs involved in US global health policy, such as the Bill and Melinda Gates Foundation, and several university-based research centres. Soros' 'Foundation to Promote Open Society' held $7.3 billion in total assets in 2015. Much of its work is in the field of public health. These NGOs may target their investments towards eradicating specific diseases or more broadly aim to improve health systems through development.

2.5 **Intersectorality**

Health outcomes are related to other areas of societal activity, not considered to be principally health, such as transportation, safety, housing, environment, agriculture (food), nutrition, income, education and employment. The HHS has an important influence on intersectoral activities, including those between and within the Departments of Agriculture, Education, Housing and Urban Development, Justice, Interior, Veterans Affairs and the Environmental Protection Agency (EPA). Examples of collaboration include intersectoral policies on food, transportation, safety and injury. Taxes on alcohol products are a form of intersectoral policy. Another example involves restrictions on tobacco use and smoking. Government, private sector

policy-makers and voluntary organizations participate in the intersectorality of health. These relationships receive substantial public attention because they garner media coverage.

2.5.1 *Intersectorality between federal government organizations*

Cross-sector health planning activity in the United States frequently takes place between government departments at the federal level or within federal governmental agencies. For example, the Healthy People programme discussed below has federal interagency work groups within the Departments of Agriculture, Education, Health and Human Services, Housing and Urban Development, Justice, Interior, Veterans Affairs and the EPA. The National Environmental Policy Act adopted in 1970 requires that federal authorities consider the environmental effects, including the health impact, of projects and programmes before they are implemented. In some cases the CDC is involved in environmental impact assessments. In many cases health impact assessments and Environmental Impact Assessments (EIAs) (technically called Environmental Impact Statements within the context of law) have considerable weight in deciding whether or not a project may go forward (US Environmental Protection Agency, 2011). The Trump Administration expressed scepticism about EIAs and viewed them largely as another regulatory impediment, particularly in the area of climate change (Shapiro, 2018).

Several government departments and agencies coordinate across a wide variety of health-relevant sectors in the United States on subjects related to complex scientific topics, such as the environment. The EPA is an example of a government organization that is concerned with intersectoral health-related activities.

Research suggests that social determinants of health are related to transportation, the environment, wealth, agriculture, education, employment and housing. Overall, the United States does poorly on social determinants of health indicators and on aligning policy across sectors (Raphael, 2007; Marmot & Bell, 2009). For example, the generosity of family policy – as measured by the total expenditure level – is correlated with child poverty levels, and the United States has the poorest performance among the high-income countries on this measure (Baker, Metzler & Galea, 2005; Commission on Social Determinants of Health, 2008, p. 11).

While it is generally agreed that health disparities across racial and ethnic groups are mainly caused by factors outside the healthcare system, access to medical care is nonetheless one critical factor in reducing these disparities. However, there is no government department in the United States that focuses on the intersectoral policy topic of the social determinants of health and how they influence the health of the population. There is little doubt that policies related to these variables influence health. These include racism (both individual and institutional), income inequality, socioeconomic status, the distribution of power, social support networks, stress levels, early life experience, social inclusion/exclusion, unemployment, physical activity/inactivity and the redistribution of other resources (Lynch et al., 1998; Wilkinson & Marmot, 2003; Feagin and Bennefield, 2014).

2.5.2 *Intersectorality between government and the private sector*

Intersectorality in the United States may involve monitoring health-relevant activities across sectors. This depends on cooperation and collaboration between the public and private sectors, as well as participation by voluntary organizations. The legitimacy of intersectoral activity by all players is related to public support. In addition, intersectoral activity that goes against stakeholder opinion is sometimes more difficult to implement compared to when it is deemed appropriate by stakeholders. Extensive consultation with stakeholders who may be affected by intersectoral regulations is common in the United States.

The need to monitor the quality and safety of medication and foods is an intersectoral area of importance for public health. Media coverage draws attention to the complexity of intersectoral policy in the agriculture/food sector. Some argue that domestic and international inspection programmes need additional resources (Harris, 2011b; Levinson, 2011). The United States adopted legislation to remedy some of the problems that the FDA has encountered with food safety, and most importantly this legislation improves the FDA's ability to work with state and local partners (Stewart & Gostin, 2011).

Another area of importance for food policy involves the marketing of food to children. The Institute of Medicine (now called the National Academy of Medicine) summarized research on the effects of junk-food and

beverage advertising to children. It reports that food marketed to children increases this group's long-term health risks. These foods are not consistent with healthy eating patterns and weight maintenance. The Institute has recommended major changes in food advertising targeted at children (IOM, 2006b). Governmental regulation of the food industry in general is not extensive and is sometimes viewed by industry as optional rather than compulsory. The federal government has taken the lead in requiring that chain restaurants with more than 20 outlets list the number of calories on their menus (Bernstein, 2011). Laws requiring it in some circumstances went into effect in mid-2018 throughout the US.

Transportation and land-use policies are closely linked to population health. Research makes a convincing case for action, though government response is erratic (Torbati, 2010). The CDC prioritizes strategies that are intersectoral and that integrate community planning, transportation and land-use policy. The goals are to increase physical activity while reducing injury, to increase access to healthy foods that are not always available in poor socioeconomic areas, and to improve air and water quality.

Transportation policy also affects air pollution and asthma as well as mortality and morbidity related to vehicle crashes. For example, reduced traffic in a city centre area cuts ozone pollution, and this in turn significantly lowers the asthma attacks children experience (Friedman et al., 2001). Numerous studies confirm this intersectoral link between air pollution and asthma in children (Renzetti et al., 2009). Urban planning may be designed to encourage biking and walking through the construction of infrastructure such as pavements/sidewalks and bicycle lanes, both of which enhance the health of the population. This type of intersectoral policy is beneficial because children who walk to school are healthier (Watson & Dannenberg, 2008).

Safety and injury policy are intersectoral, and involve the workplace, the playground, transportation, the community and the home. In the United States intersectoral policy on gun ownership is politically controversial (Wintemute, Braga & Kennedy, 2010). Public support for gun control, while high in opinion polls in the early 1990s (over 70%), shrank to 44% in 2010 (Newport & Saad, 2011). By 2018 it was 67% (Clement, 2018). As many as 40% of gun sales in the United States are 'private' and subject to little regulation, though this method of supplying firearms is the main source of guns used in crimes (Wintemute, Braga & Kennedy, 2010). One challenge with intersectoral planning in this sector is that policies enacted

by some municipalities and states have been consistently overruled by the US Supreme Court for violating constitutional protections for private gun ownership (Luo, 2011).

2.5.3 *Intersectorality and voluntary organizations*

Voluntary organizations play an important role in seeking to inform and educate the public in the United States about intersectoral linkages. For example, the American Public Health Association (APHA) has an online tool kit to assist activist citizens interested in the topic of transportation and health. It posts relevant research and provides information on local and community practices. It organizes webinars on topics amenable to intersectoral collaboration, such as climate change, injury, violence prevention, drug abuse and motor vehicle safety.

While policy-makers acknowledge the links between sectors that influence health, coordination amongst these sectors in specific situations is not always well developed. Intersectoral activity within the private sector, or between the private sector and government, is complicated by proprietary concerns. Regulations must be formulated with considerable care and in consultation with the private sector that is to be regulated.

Intersectoral policy arenas can impinge on the division of authority between the states and the federal government. An example is policy regarding highway speed limits that are set by states. As a result of the oil price crisis in 1973 the speed limit in the United States was set at 55 miles per hour by the federal government. This speed was considered optimal for minimizing gasoline consumption. It had the beneficial side-effect of reducing motor vehicle fatalities, although, admittedly, few people adhered to the slower speed limit. Since 1987, however, states with long stretches of open highways have been authorizing higher speed limits.

2.6 **Patient empowerment**

In recent years US consumers have had available more and more information to help them make choices about hospitals, physicians and insurers, with report cards widely available (if not widely used) rating the quality of alternatives. There is also far more information on the appropriateness

of services, although it is sometimes difficult for consumers to ferret out reliable advice on the internet. Most analysts would agree, however, that the greatest informational shortcomings relate to the prices of services. Price transparency, while certainly on the national policy agenda, remains elusive to most who seek it.

2.6.1 *Patient information*

There is insufficient information about prices of medical care before treatment in the United States but quality indicators for making health-related decisions are increasingly available to patients. These include data on physician and hospital quality as well as the comparative cost of insurance. The US government website offers free quality ratings of providers, including hospitals, physicians' groups, nursing homes, home healthcare and dialysis facilities. This website is designed to educate the public and to provide tools for individuals to use in determining provider competence. It also seeks to educate the public as to alternative treatment choices, for example, consumer information about vaccines.

The National Committee for Quality Assurance (NCQA), a private sector, not-for-profit organization, rates the quality of hospitals and doctors. It provides some information to consumers for free, but it charges for more detailed data. Providers must pay to be rated and they retain the right to withhold the results of the NCQA assessment from publication if they so choose. NCQA report cards – the Healthcare Effectiveness Data and Information Set (HEDIS) – are used by over 90% of America's health plans.

Other sources of patient information include independent publications such as *Consumer Reports*, which does not receive funds from government or those entities it rates. In most cases, some educational information is free, but detailed data on quality and cost information are available only to subscribers to this publication. *Consumer Reports* and several US government health sector agencies partner with the NCQA to make information available to the public.

The most common source of health information and education for consumers in the United States is the internet. Before contacting their physician, many patients consult the internet about medical issues, the effectiveness of healthcare procedures and medications (Jacobs, Amuta &

Jeon, 2017; Seçkin, 2014). Quality of internet health information varies. Some websites are highly respected, such as the Mayo Clinic's patient information pages.

2.6.2 *Patient choice*

As noted earlier, most Americans obtain insurance through employment. Employers choose the plans to offer, and while some offer more than one choice, the relative cost of premiums may influence the plan that workers choose. In 2018, 80% offered only one type of insurance plan. Large employers with more than 200 workers were more likely than small employers both to provide health insurance and to offer a choice of plans. Among large employers, 18% offered health benefits to workers after they retired but this rate is falling over time; 95% of small firms and 100% of large firms also offered coverage for dependents with an additional charge, and 5% of small firms offered only single coverage to their workers (Kaiser Family Foundation, 2018b). A patient's choice of hospital or physician may be limited by the insurance plan to a narrow panel of providers with whom the insurer has negotiated discounts. In some cases an employee may choose to go outside the panel of providers offered by the employer but they may have to pay a higher co-payment and deductible. Those who receive health benefits from the VHA or from the active military have limited choices, though Congress has tried to expand access to private sector providers, particularly for VHA patients.

Medicaid also offers choices to many recipients. Because Medicaid is a jointly administrated state-federal programme, choices may vary from state to state. Increasingly states employ managed care for their Medicaid population and these insurers limit the choice of providers. Some, but not all, states offer those eligible for Medicaid a choice of plans.

Choices are more uniform for the federally managed Medicare programme, though they still vary because of differences in regional availability of some private plans. In general Medicare beneficiaries may choose between private sector Medicare (Medicare Advantage) or traditional Medicare (government-administered). Almost a dozen supplementary Medicare plans (known as 'Medigap' plans) are available with varying benefits, co-payments and deductibles, which make for greater choice. Medigap plan

benefits have been standardized since 1992 and are revised from time to time. Not all Medigap policies are available in every geographical area but Medicare offers assistance to those seeking to purchase a policy, as do other independent online sources.

To the extent that Medicaid and Medicare reimbursements are reduced by government payers, providers may no longer accept patients with these forms of insurance. Most problems have been found in the Medicaid programme, where physicians' fees (which vary by state) are often very low compared to the amounts paid to providers by other insurers. In 2013 an estimated 69% of physicians accepted new Medicaid patients, compared to almost 85% of Medicare and privately insured patients (Hing, Decker & Jamoom, 2015).

2.6.3 *Patient rights*

The United States does not have a national comprehensive Patients' Bill of Rights (WHO, 2008). The right to healthcare is not in the US Constitution and it remains controversial, though some states have enacted a Patients' Bill of Rights. An attempt by Congress in 2001 to adopt a Patients' Bill of Rights that would provide broad protection for the whole country failed to be adopted despite the fact that both the House of Representatives and the Senate actually passed the legislation (Paasche-Orlow et al., 2009). The two houses of Congress could not agree on a final bill in Conference Committee.

THE AMERICANS WITH DISABILITIES ACT

Since the 1990 passage of the Americans with Disabilities Act (ADA), those in the United States with physical and/or mental disabilities have been granted additional civil rights. These rights fall under the four titles in the legislation covering accessibility in employment, government services, businesses (including medical offices and facilities) and telecommunication services.

The list of requirements under the ADA is extensive. In general, it stipulates that private and government health facilities must provide the same access to facilities to those with disabilities as are made available to those without disabilities. An independent federal agency called the United States Access Board ensures that the provisions of the ADA are

enforced. It focuses on accessibility to federally funded facilities. The Board coordinates the activities of many federal government agencies. Half of its members are from such agencies, and the other half are from the public, the majority of whom are disabled. Despite the ADA, there remain barriers to access in the medical care system. Patients with mobility issues still report difficulty accessing medical facility buildings and equipment, and may receive less preventive care as a result (Lagu et al., 2013; Lagu, Iezzoni & Lindenauer, 2014). Some practitioners and researchers attribute this, in part, to a separation of the delivery of care from the accreditation and enforcement arms of the protections patients are entitled to under the ADA. Suggestions to improve access and compliance with ADA regulations include implementing financial penalties for non-compliance, creating a focus on ADA compliance as a focus during the provider and facility accreditation process, banning the sale or manufacture of equipment that is not accessible under ADA standards, and prosecution of larger entities when lack of access is 'systemic' (Lagu, Griffin & Lindenauer, 2015).

THE AFFORDABLE CARE ACT

The ACA legislation of 2010 is sometimes described by proponents as though it included a Patients' Bill of Rights (Families USA, 2011). This is because some elements of the ACA protect patients by regulating aspects of the insurance industry. These are discussed in Chapter 6. Under the ACA, patients have the right to appeal claims that are denied by health insurance companies to a greater extent than in the past. It makes uniform rules and regulations that apply across all states. In addition, the federal government offers grants to the states to strengthen their appeal process. In the absence of action by a state that is not providing an appropriate appeal process for denied claims, federal law will apply (Galewitz & Andrews, 2010). The ACA also strengthened patient information protections under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) (see Section 2.7.6) by requiring operating rules for all transactions involving patient information, reiterating standards for electronic funds transfers and claims, reiterating requirements for unique health plan identifiers, and requiring certificates of compliance from health plans. The ACA requires more transparent and consistent approaches to editing of claims requirements by health plans (CMS, 2018a).

2.6.4 *Complaint procedures*

This section is divided into three subsections: complaints related to injuries, disputes about insurer coverage decisions, and the medical malpractice system.

Medical errors have received considerable attention in the United States. While a 2000 report from the IOM estimated that as many as 98 000 Americans died in hospitals annually as a result of medical errors, a recent literature review claimed that medical error is under-recognized due to data limitations, and estimated that in 2013 alone 250 000 inpatient deaths were due to medical error. This exceeds the death rates from more publicized causes such as traffic accidents, breast cancer and AIDS, making it the third highest cause of death in the United States. (IOM, 2000; Makary & Daniel, 2016). More are injured but do not die, and many are also harmed in ambulatory care settings. One set of estimates finds that one-third of hospital patients have adverse events while in hospital (Classen et al., 2011). As a result, there is a renewed emphasis on patient safety in the country, a topic focused on in Chapter 5.

COMPLAINTS RELATED TO INJURIES

A patient who believes that they have been injured has several alternative courses of action. Some relate to receiving compensation for the injuries, while others relate to punishing the party (usually the provider but sometimes the insurer) held responsible. Although a patient may ultimately file a lawsuit, as discussed in greater detail below under medical malpractice, there are other avenues by which such complaints can be resolved.

There are various ways in which a patient can lodge a complaint against a physician. One way is to report the physician to their medical or specialty society. Examples include the AMA, state medical societies and societies of particular specialists. Patients may also file a complaint with the state licensing board, which has the authority to revoke a physician's licence. While any of these can lead to sanctions against the physician, it does not secure a financial settlement.

The patient may begin by discussing the complaint with the physician; on occasion a resolution can be accomplished simply with an apology. Another option is to bring it to the attention of the medical group to which

the physician belongs. (The great majority of physicians are now in groups; in 2014 only 18% of physicians were in solo offices (Harris, 2011a).) If this does not lead to resolution, a lawsuit may be filed.

Hospitals typically have formal grievance procedures for when a patient lodges a complaint. If the patient does not receive a satisfactory outcome, they can often take the grievance to a state agency such as the state's Department of Public Health. Further avenues include the state and/or the American Hospital Association and the Joint Commission, which is responsible for the accreditation of all US hospitals. As in the case of physicians, however, this will not lead to a financial settlement. Thus, lawsuits are the final remedy.

DISPUTES ABOUT INSURER COVERAGE DECISIONS

The most common complaint against private insurers relates to reimbursement: not covering all or part of a medical care expense that the patient believes should be covered. This can stem from one of two issues: disagreements about whether a service should have been covered under the insurance contract and disagreements about whether a service that otherwise was covered was indeed medically necessary.

The grievance mechanism depends on the nature of the insurance contract. If a person's employer is not self-insured or if insurance is purchased individually (see the discussion on ERISA in Section 2.7.1), such complaints are first brought to the insurer for reconsideration. If the patient disagrees with the decision, in most states insurers are required to allow the claim to be adjudicated by an independent panel of experts. This is known as independent or external review (one provision of the ACA was to require such a system in all states). One problem with this system, however, is that there could be a conflict of interest whereby such review organizations tend to rule in favour of the insurer. This is because the review organization may rely on the insurer for other business and fear that a negative ruling could risk future referrals (Rodwin, 2011).

For those who work for a self-insured employer, coverage decision complaints are filed with the employer, which, generally, is also required to allow for a subsequent independent review if the patient disagrees with the coverage decision. Moreover, if it is alleged that the coverage decisions harmed their health, then the patient may choose to file a lawsuit (Lieberman, Peppe & Lundy, 2005).

While it is difficult to generalize about Medicaid – because processes differ between states – typically, coverage decision complaints are filed with the state Medicaid department. Medicare has a formal appeals process with many common elements across those in traditional Medicare (Parts A and B) and Medicare Advantage plans (Part C). There is a five-step appeals process, beginning with the private company that handles reimbursement for Medicare beneficiaries in that area (Parts A and B) or the Medicare Advantage plan itself. Following that is an independent review by a reviewer that was not part of the original denial. Third is appeal to an administrative law judge, followed by appeal to the Medicare Appeals Council. The final appeal is through the federal court system.

THE MEDICAL MALPRACTICE SYSTEM

Lawsuits are often pursued when there is not a satisfactory resolution to a complaint. In the United States a great deal of attention has been paid to the medical malpractice legal system since the late 1960s. For several decades malpractice payouts – and therefore premiums paid by providers – rose substantially, but since the early 2000s the trend has reversed, with the number of paid claims per capita as well as total payouts falling by about 50% between 2001 and 2012 (Paik, Black & Hyman, 2013). In the most recent period premium growth for malpractice insurance has been stable, with over 70% of medical liability insurers reporting that rates had seen no year over year change from 2015 to 2018, largely due to tort reforms across states over the past two decades that have resulted in fewer overall claims and fewer claims being pursued to trial (Japsen, 2018). Over 30 states have put caps on payouts for individual cases, typically limiting the amount that can be paid for 'pain and suffering'.

There are both direct and indirect costs of the malpractice system. The direct costs include payments made for economic, noneconomic and punitive damages, and administrative expenditures for both sides of the dispute, as well as overhead costs. Mello et al. (2010) estimate this amounted to about $10 billion in 2008, equal to about 0.4% of national health expenditures. Viewed this way, it is difficult to contend that the malpractice insurance system is a major factor in rising US healthcare costs. However, estimates of the total costs, which include direct costs and the costs of practices such as defensive medicine, range from $55.6 to $200 billion

annually, or approximately 2.4–10% of healthcare spending (NCSL, 2014b). Nevertheless, there is substantial variation across geographical areas. The American Medical Association (2018) reported that average premiums in 2017 for general surgeons for policies in Florida were $190 000 per year compared to just over $40 000 in California

A number of studies have been conducted on the costs of defensive medicine, which, nearly all analysts agree, are greater than the direct costs. However, there is little agreement on how much greater the costs of defensive medicine are. The most recent estimates, which include both hospital and physician costs, are about $46 billion. When combined with the $10 billion in direct costs, the total estimate of the cost of the system is $56 billion, which constituted 2.4% of national healthcare expenditures in 2008 (Mello et al., 2010).

Regardless of the costs of the malpractice system in general and defensive medicine in particular, there are benefits that should be considered. Firstly, providing compensation to someone who is injured can be viewed as a benefit to society. Secondly, some of the additional tests that are conducted provide information that would not be gathered otherwise. Moreover, part of the motivation for additional tests might not be defensive medicine *per se*, but rather, physician-payment systems that provide additional compensation for ordering tests.

The ACA does not directly address the issues of medical malpractice. The legislation provided demonstration grants for up to five years to states to test alternatives to the current system. Indeed, states have been pivotal in enacting reforms to the system. The most common ones relate to discouraging frivolous lawsuits and limiting the size of noneconomic damages (e.g. pain and suffering). California's law has received the most attention. Since 1974 noneconomic damages have been limited to $250 000. In 2020, 30 states have established limits on the size of malpractice awards (Miller & Zois, 2020). Currently, about two-thirds of states have imposed some limit on damages that can be awarded. While there is general consensus that such limits keep premiums down by reducing the number of lawsuits filed, as well as the size of damage awards, there is little consensus on how much money is saved or their desirability.

Physicians in the United States are at considerable risk of being sued at some point in their career. Even among physicians in low-risk specialties such as psychiatry, 75% face a malpractice claim during their career. The figure for high-risk specialties such as surgery is 99%. However, since most

suits do not end in an award, the chances of the insurer having to make a payment on behalf of a physician during their career are lower: 19% in low-risk specialties and 71% in the high-risk areas. The average (mean) award has been calculated to be about $275 000, and the median about $110 000 (Jena et al., 2011).

It is generally agreed that the medical malpractice system does not operate optimally. The Harvard Medical Practice Study found that only between 2% and 14% of instances of negligence in the hospital led to the filing of a malpractice claim (and thus, even fewer are compensated) (Localio et al., 1991). This is due to several factors, including patients not recognizing that they were the victims of negligence, not wanting to adversely affect their relationship with their physician, not wanting to deal with the legal system, and the reticence of attorneys to take on cases where they believe the chances of victory are small or the ultimate award will not be sufficient to compensate them for their efforts (Localio et al., 1991). A newer study examined whether awards go to those who were not harmed or in which there was no medical error. It estimated that 16% of patients who filed claims but who were not injured received compensation, and that 28% who were injured, but not due to negligence, also received compensation. This was the exception, however, as 73% of those who were the victims of negligence and filed a claim did receive compensation (Studdert et al., 2006).

Moreover, most malpractice claims are abandoned before they are settled. This is the case for a variety of reasons, including the acquisition of additional information by plaintiffs or their attorneys that the case against the provider is not as strong as originally thought. Nevertheless, substantial time and costs are expended on the cases that are ultimately dropped (Golann, 2011).

An idiosyncrasy with the malpractice system is that individuals who work for self-insured firms – about 61% of covered employees – are governed by federal government regulation as specified by ERISA rather than the tort law specified by the state. These individuals have the right to sue their doctors for negligence, but they have very limited rights if the harm they incurred was as a result of a provider or health plan not providing a service. In such cases, those subject to ERISA can only be reimbursed for the cost of the service that was denied. Thus, whether an American can receive compensation, particularly for services *not* provided, depends on the nature of their employment contract, which creates a substantial inequity (Korobkin, 2003).

Those on the political right as well as the provider communities have called the current system unfair to doctors, leading both to departures from the labour force through retirement, as well as the provision of additional services to protect doctors against lawsuits (known as 'defensive medicine'). They further believe that it encourages frivolous lawsuits and that jury awards are often far greater than the damages inflicted. Those on the political left, many attorneys and consumer advocates counter that it is important that patients be fully compensated for their losses, including pain and suffering, and that, furthermore, the system as currently structured is a critical deterrent against provision of poor medical care.

Over the years a number of proposals have been put forward to reform medical malpractice. Besides limiting total or noneconomic damages (a strategy currently employed by over 30 US states), these include caps in attorney's fees, which commonly are set at 33% of the total award. These 'contingency fees' encourage attorneys to take up lawsuits; supporters point out that without them, many consumers would not be able to afford to hire lawyers because they could not afford the hourly fees but opponents contend that it encourages large numbers of sometimes frivolous cases.

Broader reforms have also been suggested. One example is 'no-fault' insurance, where payments are made to patients who have experienced an adverse medical event, but where negligence does not have to be proven. In the United States the Workers Compensation system offers an example. If an employee is injured on the job, they can receive compensation irrespective of whether the employer was at fault (Tappan, 2005). Variations of no-fault for medical errors exist in Finland, New Zealand and Sweden. As yet, no US states have enacted no-fault policies, though medical tort reform remains a high priority issue among policy-makers. The ACA authorized $50 million in grant funding for states wishing to develop and implement alternative models to current tort law, but none of the funding had been appropriated to fulfil this purpose as of 2017 (Parekh & Hoagland, 2017). Researchers studying the implementation of no-fault systems abroad have pointed out that there are several key challenges to implementing no-fault in the United States based on the nature of the healthcare system. These include constitutional barriers in some states that would require a voluntary rather than mandatory no-fault system, a long tradition in the United States of seeking legal compensation for medical errors or injuries, and a system of health insurance that covers less of the total cost of care, leading to more

impactful financial benefit through filing a legal claim in the traditional tort system (Mello, Kachalia & Studdert, 2011).

Proponents argue that no-fault will allow more patients who experience harm to be compensated and will reduce the considerable legal and overhead costs associated with the current system. Opponents have brought up a number of objections, including the difficulty in coming up with a compensation schedule and the suggestion that such a system may remove an important deterrent to the provision of poor medical care (Roemer, 2007).

2.6.5 *Patient participation*

Consumer representation has proved difficult to harness effectively in the health sector. Many providers, particularly physicians, remain sceptical about the value of consumer participation in the health sector. In some cases, publicly solicited participation is not empowerment so much as *pro forma* involvement to legitimize organizations (van de Bovenkamp & Trappenburg, 2009).

Overall, patient participation exists at the national level, but it is greater at the state and local levels (Daw, Truong & Rosenau, 2011). The FDA is an exception because it provides visible and effective opportunities for citizens to play a strong role on national health policy-making. Consumers are active members on most FDA advisory committees though they never constitute a majority, nor do they serve as chair. They often have the right to vote, however. There is little consumer activity in Medicare or Medicaid nor are there any top-level consumer positions at the VHA. The ACA included a consumer advisory council for the new Independent Payment Advisory Board, the function of which was to limit spending growth in the Medicare programme, but this board never came to fruition.

Some states encourage consumers to participate in newborn screening advisory boards (Hiller, Landenburger & Natowicz, 1997). Under the terms of the United States Public Health Services Act, patients hold 51% of positions on the local governance boards of Federally Qualified Health Centers. Consumer members have significant input on issues related to access, utilization and community outreach (Daw, Truong & Rosenau, 2011).

Consumers also participate as stakeholder advocates or interest groups that lobby to influence policy, often on health-specific issues. These disease-specific or illness-specific consumer groups are especially active in the United States. For example, there are 141 patient advocacy groups on the topic of brain tumours and 40 for melanoma. This amounts to one advocacy group for every 205 brain tumour patients. There is some evidence that such a proliferation of advocacy groups is counterproductive as groups compete for the same resources (Marcus, 2006). Many consumer-oriented advocacy groups have strong local connections, such as the National Alliance on Mental Illness. Some specialize narrowly while others, such as the American Association of Retired Persons (AARP), advocate for a much broader range of issues.

2.7 **Regulation**

Regulation in the US healthcare system may be imposed by private or public entities at the federal, state and local county and city levels as a response to 'the constant need to balance the objectives of enhancing quality, expanding access, and controlling costs in healthcare' (Field, 2007). All actors in the healthcare system are subject to regulation, often from multiple government and nongovernment agencies.

As introduced in Section 2.1, major federal regulatory organizations include the CMS, the CDC and the FDA, all under the umbrella of the HHS. State regulatory bodies include public health departments, provider licensing boards and insurance commissioners. Local counties and cities also regulate healthcare through their public health and health services departments. Independent nongovernment and provider organizations such as the AMA and the Joint Commission also have a regulatory role in the US healthcare system. This section discusses the role of regulation and governance by public and private regulators on third party payers, providers, pharmaceuticals, medical devices and aids, capital investment, patient privacy and human subjects, and public health.

2.7.1 *Regulation of third-party payers*

Regulation and governance of private insurers, or third-party payers, in the United States is shared by federal and state agencies. The current regulatory environment facing third-party payers has arisen primarily out of three pieces of legislation: the McCarran-Ferguson Act, ERISA and the ACA.

In reaction to a Supreme Court ruling that the business of insurance was interstate commerce and therefore subject to Congressional regulation and federal antitrust laws, the McCarran-Ferguson Act was passed by Congress in 1945 to counteract the Supreme Court decision and reaffirm the power of states to regulate and tax insurance products of third-party payers (Government Accountability Office, 2005). The Act exempted certain insurance practices from existing federal antitrust laws (i.e., Sherman, Clayton, Federal Trade Commission Acts) to which other interstate businesses were subject (Government Accountability Office, 2005). This exemption applied to activities that: "constitute the 'business of insurance'; are 'regulated by State law'; and do not constitute an agreement or act 'to boycott, coerce, or intimidate'". In essence, this Act reserved authority to regulate third-party payers for state authorities. Many, if not all, states have provisions in their codes to prohibit insurers from engaging in unfair or deceptive acts or practices in their states (Government Accountability Office, 2005). However, in 2011, as part of the ACA, the CMS – a federal agency – took over the review of health insurance rates increasing in excess of 10% annually from some states due to a lack of or inadequate state regulation of health insurance products sold to individuals and small businesses (CMS, 2010).

The other key piece of legislation regarding the regulation of third-party payers is ERISA, enacted by Congress in 1974 (CRS Report for Congress, 2009). ERISA regulations fall under the Department of Labor, in contrast to McCarran-Ferguson's focus on state-level regulation. They set minimum standards to protect individuals participating in most voluntarily established pension and health insurance private sector employee benefit plans (i.e., self-insured employers). ERISA does not require that private employers offer health insurance but governs the administration of these plans if employers self-insure and defines how disputes are handled. Group health plans established by government or church organizations and plans that only apply to workers' compensation or disability, or unemployment are not governed by ERISA (US Department of Labor, 2019). Regulations of employer-sponsored health insurance plans imposed by ERISA include

the requirement that plans provide enrollees with information about plan features and funding, fiduciary responsibilities for managers of plan assets, and procedures for establishing grievances, appealing denied claims for benefits, and rights to sue for benefits and breach of fiduciary duties (US Department of Labor, 2011).

Pre-emption of state regulatory laws is an important cornerstone of ERISA. US courts have upheld that ERISA pre-empts certain state health policies, such as employer insurance mandates, financial reserve requirements, premium taxes and managed care standards, placing constraints on states' abilities to regulate insurance benefits and enact healthcare reforms (Butler, 2000; Gabel, Jensen & Hawkins, 2003). The pre-emption was included by Congress to 'avoid multiplicity of regulation in order to permit nationally uniform administration of employee benefits' for employers with workers in multiple states (CRS Report for Congress, 2009). However, ERISA does not regulate benefits to the extent that the states do. Employer insurance plans that fall under ERISA have different (and often less comprehensive and less expensive) benefit structures than employer-sponsored plans that fall under state insurance regulations.

About 60% of employees covered by employer insurance were enrolled in self-insured plans in 2015, and are therefore affected by ERISA's pre-emption of state regulation (Fronstin, 2016; Gabel, Jensen & Hawkins, 2003; Pierron & Fronstin, 2008). Although ERISA broadly pre-empts state laws governing the administration of health plans and definition of how grievances are resolved, as noted earlier, states regulate many other components of the third-party payer market. Since its enactment in 1974, there have been several substantial amendments to ERISA. The Consolidated Omnibus Budget Reconciliation Act (COBRA) of 1985 provided some workers and their families the right to continue their healthcare coverage for a limited time after job loss and other specific events (US Department of Labor, 2011). This is significant because, as mentioned earlier, nearly half of Americans receive their health insurance coverage through their employer. The Health Insurance Portability and Accountability Act (HIPAA) of 1996 amended ERISA to include limitations on exclusions from health insurance coverage based on pre-existing medical conditions events (US Department of Labor, 2011). The Mental Health Parity Act of 1996 was added to ERISA so that health insurance plans offering mental health coverage had annual and lifetime benefits on a par with those for medical and surgical benefits (US Department of Labor, 2011). The final two amendments to ERISA – the

Newborns' and Mothers' Health Protection Act passed in 1996 and the Women's Health and Cancer Rights Act passed in 1998 – respectively established minimum maternity lengths of stay and covered reconstructive surgery after mastectomies (US Department of Labor, 2011).

The 2010 ACA included several new regulations governing the third-party payer market. These are discussed in Box 2.2 and Chapter 6. Most importantly, health plans are required to offer and renew coverage to everyone and cannot charge more to those who have pre-existing health conditions.

2.7.2 *Regulation of providers*

Physicians and hospitals are regulated by public agencies at the federal and state level and by national nongovernmental and provider regulatory organizations. Physicians, as well as nurses and many allied health professionals, are accredited by licensing boards in the state in which they practise. State licensing boards issue new licences to healthcare professionals with the requisite educational credentials, renew licences and enforce basic standards of practice through their power to suspend or revoke licences to practise (Field, 2007).

In addition to state-level regulation, physicians are also regulated at the federal level by the CMS imposing criteria for reimbursing providers for services rendered. For example, Medicare requires physicians to meet certain requirements, many of which overlap with state-licensing requirements (CMS, 2011a). Since Medicare patients make up a significant portion of many physicians' payer mix, the requirements for reimbursement serve as a form of provider regulation. Furthermore, the CMS does not reimburse physicians for self-referred services. Also known as the Stark Law, this regulation prohibits payment to physicians for referrals to services in which they or their family members have a financial interest (CMS, 2011b).

Physicians are also regulated by managed care organizations (e.g. HMOs, PPOs) and by the hospitals at which they practise or have admitting privileges. Through various mechanisms for controlling costs (e.g. capitation, gatekeeping and pre-authorization) and improving quality (e.g. disease management), managed care organizations regulate physician behaviour. Managed care organizations also give credentials to physicians in their network, again ensuring providers are able to demonstrate basic requirements to practise similar to those required by state licensing boards and the CMS.

Physicians may be disciplined by managed care organizations through exclusion from the network. Hospitals at which physicians practise also regulate physicians through providing credentials and periodically renewing them. Hospitals oversee physician practice through review boards and can discipline physicians for substandard care by requiring additional medical education or supervision by colleagues, or suspension or revocation of clinical privileges (Field, 2007).

Hospital regulation in the United States occurs primarily via certification requirements by the nongovernmental Joint Commission, by federal law on who must be treated at hospitals, and by eligibility for reimbursement criteria imposed by the CMS. Some of the most important hospital oversight results from the self-policing role of accreditation by the Joint Commission. This organization is a nongovernmental regulatory body that includes more than 4000 hospitals (77%) in the United States (Joint Commission, 2017). Auditors from the Joint Commission survey hospitals, unannounced, and evaluate compliance with Joint Commission standards by tracing care delivered to patients, acquiring documentation from the hospital, tracking hospital quality measures and on-site observation. Annual fees for hospitals range from $2000 to $37 000. Re-accreditation surveys occur every three years (Joint Commission, 2017).

The Emergency Treatment and Active Labor Act (EMTALA), passed in 1986, requires that all hospitals participating in Medicare provide 'a medical screening examination when a request is made for examination or treatment for an emergency medical condition, including active labour, regardless of an individual's ability to pay' (CMS, 2011c). After screening, hospitals are required to stabilize patients with emergency medical conditions or, if they are unable to stabilize a patient (e.g. due to capacity constraints), transfer the patient for stabilization. As a result of EMTALA, the emergency department has become an access point commonly used by patients with otherwise limited access to primary care (e.g. the uninsured).

As a result of the Hill-Burton Act, discussed in Section 2.1.4, many US hospitals are required to take Medicare and Medicaid patients and are therefore subject to CMS eligibility criteria for reimbursement through conditions of participation (CoPs) and conditions for coverage (CfCs). The CMS is able to regulate hospital care by ensuring facilities receiving CMS reimbursement meet minimum quality and safety standards (CMS, 2011d). In fact, these conditions for participation and coverage also apply to many other health services delivery organizations (e.g. nursing homes,

psychiatric hospitals). The conditions laid out by the CMS cover most of the essential components of hospital or other health services facilities, including requirements for staffing, patients' rights and medical records.

2.7.3 *Regulation of pharmaceuticals*

Pharmaceuticals in the United States are primarily regulated at the federal level by the FDA. The present-day FDA evolved from legislation adopted in 1906 in response to public health epidemics resulting from unsafe foods and drugs.

The FDA approval process for new drugs or biological products consists of animal testing and then four phases of testing in humans, three of which are completed before the drug can go on the market and the last continues on after the drug has been released. The clinical trials stage often takes several years, with costs largely borne by the sponsor (e.g. the drug manufacturer). However, for biological products the ACA included new statutory provision to expedite the FDA approval process for drugs that are 'biosimilar' with an FDA-approved biological product (FDA, 2012). Use of biosimilars is estimated to save the US healthcare system approximately $44 billion between 2014 and 2024 (Boccia et al., 2017).

Like the European Medicines Agency, the FDA does not require economic analyses of drugs during the approval process. Therefore, drugs need only be effective, not cost-effective or comparably effective, for FDA approval.

With the passage of the ACA in 2010, the federal government is stepping up research on comparative effectiveness (Kaiser Family Foundation, 2011a). The ACA created the Patient-Centered Outcomes Research Institute (PCORI), a public–private organization that funds comparative effectiveness research (Iglehart, 2010). Funds come from Medicare and private insurers. The PCORI has a research agenda based on private stakeholder recommendations rather than government or scientist-initiated recommendations. The ACA charges the private stakeholders to focus on technologies for the most common conditions, especially chronic ones, and those affecting minorities. The research cannot include cost-effectiveness.

The FDA also regulates pharmaceutical advertising through its labelling requirements and its ability to penalize drug companies conducting advertising it deems excessive or misleading. From the 1990s drug companies

started advertising directly to consumers. Among the high-income countries, the United States is one of the few to permit direct-to-consumer advertising of prescription-only drugs (Magrini, 2007). While no laws exist in the United States preventing drug companies from advertising prescription drugs to consumers directly, the FDA can prosecute manufacturers for advertising that is false or misleading.

The United States does not have national price regulations on pharmaceuticals, although Medicaid and the VA are exceptions (Adams, Soumerai & Ross-Degnan, 2001). Drug manufacturers in the United States hold *de facto* monopolies in the pharmaceutical market for a drug, often resulting in much higher prices compared to some other countries. Prior to 1984, generic versions of branded drugs were held to the same standard of the four-phase clinical trial process. This stymied the entry of generics into the market. In 1984 Congress adopted legislation that would allow generics to use some of a branded drug's FDA safety and efficacy data in exchange for extending patents on branded drugs from 20 to 25 years (Field, 2007). Under the ACA, the FDA can approve generic biological products after 12 years of patent protection to further promote the use of generics (Kaiser Family Foundation, 2011a).

During the 1980s, in an effort to rein in spending on pharmaceuticals, states began repealing anti-substitution laws and enacting substitution laws to facilitate the prescribing and filling of cheaper therapeutic alternatives to branded drugs (Field, 2007). The Medicaid Drug Rebate Program, created in 1990 as part of the Omnibus Budget Reconciliation Act, required pharmaceutical companies to give states and the federal government rebates for drugs sold to Medicaid and VHA patients (CMS, 2011e). Approximately 600 drug companies participate in the rebate programme, a requirement for Medicaid drug coverage, with rebates ranging from 13% to 23% of the average manufacturer price (AMP) for the drug (CMS, 2017).

The United States does not allow the re-importing of drugs previously manufactured in the United States but sold at lower prices in foreign markets or the importing of drugs by individuals directly from foreign producers. The 1987 Prescription Drug Marketing Act made it illegal for drugs to be imported into the United States except by the original US manufacturer. The ACA continued the ban on importation of prescription drugs (see Chapter 6). Legislative solutions to rising drug costs have managed to evade Congress over the past few decades.

2.7.4 *Regulation of medical devices and aids*

In addition to regulating pharmaceuticals, the FDA is also the principal regulator of medical devices and radiation-emitting products used in the United States. The FDA's Center for Devices and Radiological Health (CDRH) regulates firms that manufacture, repackage, relabel and/or import medical devices and radiation-emitting electronic products (medical and non-medical), such as lasers, X-ray systems, ultrasound equipment, microwave ovens and colour televisions (FDA, 2011a). The CDRH divides medical devices into Classes I, II and III, with the level of regulatory control increasing with the class. Generally, Class I devices are exempt from FDA notification before marketing, most Class II devices require premarket notification and most Class III devices require premarket approval from the FDA. The FDA also monitors reports of adverse events and other problems with medical devices and alerts health professionals and the public when needed to ensure proper use of devices and the health and safety of patients (FDA, 2011b).

2.7.5 *Regulation of capital investment*

Federal-level regulation on capital investment arose with the Hospital Survey and Construction Act of 1946 – also referred to as the Hill-Burton Act – and also the National Health Planning Law of 1974. The Hill-Burton Act provided construction funds to increase the capacity of health services throughout the country. In exchange for the funds, hospitals, nursing homes and other health facilities were required to provide a certain amount of uncompensated care to individuals living in the area (US Department of Health and Human Services, 2010b). Hill-Burton funds were distributed through local and state health planning boards. These boards in turn regulated the construction of the facilities built within their jurisdiction. The certificate of need (CON) programme is discussed in more detail in Section 2.1.4.

From 1972 to 1995 the Office of Technology Assessment (OTA) aided Congress in the identification and consideration of existing and probable impacts of technologies, including medical technologies (Federation of American Scientists, 2011). During its existence, the OTA conducted a number of cost-effectiveness studies related to capital investment so as to

inform regulators about policy decisions regarding these investments. The OTA was similar to government offices in other high-income countries in its cost-effectiveness research. In 1995 Congress de-funded the OTA (Princeton University, 2012).

2.7.6 *Regulation of patient privacy and human subjects*

Regulations regarding the privacy of health information in the United States were initiated in the HIPAA Privacy and Security Rules passed by Congress in 1996. The privacy component of the law provides federal protection for personal health information and gives patients rights with respect to that information (US Department of Health and Human Services, 2011b). The security portion has administrative, physical and technical safeguards to ensure the confidentiality of patient information. HIPAA privacy and security rules are enforced by the Office of Civil Rights under the HHS. The Patient Safety and Quality Improvement Act of 2005 (PSQIA) patient safety rule protects 'identifiable information being used to analyse patient safety events and improve patient safety' (US Department of Health and Human Services, 2011b). The PSQIA of 2005 requires disclosure of medical errors to affected patients while protecting those who report the errors by not allowing voluntary admissions by providers to be used against them in a court of law (Howard et al., 2010).

The Office for Human Research Protections (OHRP) within the HHS regulates the protection of human subjects used in clinical and non-clinical research. Its purview 'applies to all research involving human subjects conducted, supported or otherwise subject to regulation by any federal department or agency' and includes 'research conducted by federal civilian employees or military personnel' and 'research conducted, supported, or otherwise subject to regulation by the federal government outside the United States' (OHRP, 2011). Since the vast majority of the research on health in the United States is funded by various government grant mechanisms or regulated by some federal agency, OHRP regulations regarding human subjects research affect much of the research involving people. In addition to the OHRP, many individual research institutions, such as universities, also have departments that verify whether human subjects research is warranted and will be conducted safely, effectively and with dignity.

2.7.7 *Regulation of public health*

Regulation of public health occurs at multiple levels of government. At the federal level, the CDC (discussed earlier), the EPA, the United States Department of Agriculture (USDA) and the Occupational Safety and Health Administration (OSHA) all regulate various aspects of public health. State and local offices of public health also play important roles in regulating public health.

The United States has 50 state-level public health agencies. In addition, many of the more than 3000 counties and 15 000 municipalities have some type of local health department or have their own public health regulations (Diller, 2007). These governmental agencies regulate a range of public health topics including: air quality, alcohol, animals, cemeteries and burial, communicable diseases, emergency medical services and ambulances, fair and affordable housing, firearms, food, garbage collection and disposal, housing and building codes, mass gatherings, massage establishments, noise, nuisances, pest control, restaurants, sewer systems, smoking, swimming pools and spas, tobacco sales and water wells (McCarty et al., 2009).

The USDA regulates and inspects food services, including production. It also recommends nutritional guidelines and the fortification of certain food staples (e.g. milk, bread, salt), regulates the import and export of animals and plants, and regulates the marketing of foods (US Department of Food and Agriculture, 2011).

The EPA regulates public exposure to harmful environmental contaminants. In 1970 Congress passed the National Environmental Protection Act, the Clean Water Act and the Clean Air Act, giving the newly created EPA the authority to establish and enforce environmental protection standards (US Environmental Protection Agency, 2011). The EPA's reach expanded in 1980 when Congress, in response to chemical contaminants in groundwater from toxic dumps, passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This gave the EPA the charge of cleaning up toxic waste at 'Superfund' sites, assessing liability and financial responsibility for the contamination, and suing to recover clean-up costs (US Environmental Protection Agency, 2011).

The OSHA also plays a role in public health regulation. Its charge is to mitigate the harm caused from employee exposure to workplace hazards through regulation and training (OHRP, 2011).

Federal, state and local agencies share responsibility for regulating abused substances and other public health threats such as gun violence. The following paragraphs discuss these regulations. At the federal level, the FDA not only regulates food, drugs, vaccines and biologic products, and medical devices, but includes regulation of tobacco products in its purview. The FDA's Center for Tobacco products (CTP) employs a public health approach to regulate cigarettes, cigars, hookah, electronic vapor products, pipe tobacco and other tobacco products, in accordance with the 2009 Tobacco Control Act. The CTP sets manufacturer requirements, rules regarding the sale and distribution of products, marketing, advertising and product packaging, among others (FDA, 2018). In addition to FDA regulation, states, localities and tribal governments all maintain authority to regulate some aspects of tobacco product use, marketing and distribution. States and local entities have the power to raise tobacco tax rates, enact smoke-free laws in public places, fund tobacco prevention campaigns, place some limits on marketing and advertising, implement counter-marketing and anti-smuggling campaigns, enable access to tobacco cessation programmes and products, and restrict the sale, distribution and possession of tobacco products, including increasing the minimum legal age to purchase these products (Tobacco Control Legal Consortium, 2018).

Alcohol is regulated at the state and local level in the United States, since the 21st Amendment to the Constitution allows individual states to control the sale, distribution, importation and possession of alcohol within the state. States then frequently assign localities the responsibility to regulate alcohol in accordance with state standards. The Federal Uniform Drinking Age Act of 1984 established a federal minimum legal drinking age of 21, and federal law defines an alcoholic beverage as any beverage that contains more than 0.05% alcohol. The maximum level of alcohol (MLA) per drink varies by state, as do laws regarding licensure, penalties for non-compliance, and intoxication (American Addiction Centers, 2018). In addition, many states (14, plus the District of Columbia in 2011) still enforce 'blue laws', originating from Christian religious beliefs, which restrict the sale of alcohol on Sundays (Lovenheim & Steefel, 2011).

Cannabis is another product regulated at the federal and state level. While it remains illegal to possess or use cannabis under federal law, some states have chosen to legalize medical and/or recreational use of cannabis in recent years. As of 2018, 33 states and the District of Columbia have

approved comprehensive medical cannabis/marijuana programmes protecting some consumers of cannabis for approved medical reasons from criminal liability, and offering access to cannabis at approved dispensaries. Thirteen additional states had limited access medical programmes, and 10 states and the District of Columbia have legalized marijuana for adult recreational use. While cannabis distribution remains illegal at the federal level, the US Department of Justice allows federal prosecutors broad latitude to decide how they will prioritize enforcement of federal law, offering them the opportunity to defer to state-based enforcement efforts if appropriate (NCSL, 2018b).

Gun violence has been named a public health issue in the United States by leading organizations such as the AMA, and more than 100 medical organizations signed a letter to Congress in 2016, asking members to lift the Dickey Amendment. The Dickey Amendment, passed in 1996, forbids the CDC from using any federal funding to 'advocate or promote gun control', though its mission includes investigation into accidental death and injuries, as well as suicide, to which gun violence contributes (Zhang, 2018). In addition, the Bureau of Alcohol, Tobacco, Firearms and Explosives is prohibited from sharing data with either the NIH or the CDC. Lack of funding and lack of available data have been some of the factors hindering regulation of guns to reduce the public health burden of gun violence in the United States. (Evans & Anthony, 2018).

2.7.8 *Health technology assessment*

Health technology assessment (HTA) is the evaluation of the effectiveness, safety, costs and patient-reported outcomes of healthcare technology with the aim of informing health policy-making (Sullivan et al., 2009). HTA is conducted in the United States by public and private payers, universities, hospitals, research institutes and manufacturers. HTA has a long history in the United States. However, several earlier organizations which conducted HTAs, such as the Office of Technology Assessment (OTA), no longer exist due to lack of funding as well as political pressures (Sullivan et al., 2009). Since the de-funding of the OTA, the US Government Accountability Office (GAO) has performed technology assessments, but these are not specifically HTAs.

Currently, on the federal side, Medicare conducts HTA through the Medicare Evidence Development and Coverage Advisory Committee (MedCAC), an appointed body of national experts on medical technology that holds public meetings to examine the evidence regarding health technologies. Cost-effectiveness cannot be part of the consideration. CMS places the evidence presented at the committee meetings and final coverage policies on the CMS website. Assessment of pharmaceuticals covered by Medicare is separate from this process. Medicare coverage of pharmaceuticals – the Part D programme – is a privately administered benefit, so all pharmaceutical coverage decisions are made by Part D private contractors, with the exception of coverage restrictions placed by Medicare.

The Agency for Healthcare Research and Quality is the largest federal funder of HTA research (Sullivan et al., 2009). It conducts systematic reviews to assess the effectiveness, comparative effectiveness and safety of medical technologies and interventions. The AHRQ's Technology Assessment programme provides technology assessments for the Centers for Medicare & Medicaid Services.

Both the federally run VHA and the Military Health System (MHS) conduct HTAs on pharmaceuticals to help with decision-making regarding medications to use within these systems. The VHA does this through the Pharmacy Benefits Management Strategic Healthcare Group (PBMSHG), whereas the MHS does this through the Department of Defense Pharmacoeconomic Center (PEC).

The FDA does not conduct formal technology assessments of pharmaceuticals but instead evaluates the safety and efficacy of drugs by providing research guidelines and reviewing the studies conducted by external researchers. The FDA focuses on controlled trials of the effectiveness and safety of each drug rather than studies of the comparative effectiveness of drugs (see Section 2.7.3).

At the state government level, many Medicaid programmes support HTA for pharmaceuticals and medical technologies (Sullivan et al., 2009). Although these HTA programmes are usually administered by state Medicaid staff with support from clinical experts, state administrators often purchase HTAs from private organizations. Budgets for HTAs usually come from the state alone (no federal support). Medicaid agencies in 14 states have relied on pharmaceutical evaluations conducted by the Drug Effectiveness Review Project (DERP), created in 2001 by the Oregon Health and Sciences University. The publicly available reports from DERP have a description

of the HTA issues, a description and synthesis of the relevant literature, and a judgement on the quality of the evidence. Cost-effectiveness is not considered, and the reports do not provide recommendations about coverage.

Many of the larger private insurers and pharmacy benefit management companies have HTA programmes with their own researchers, financial analysts and data systems (Sullivan et al., 2009). Smaller health plans have more limited abilities to conduct the research internally, and often depend on HTAs from external private or public agencies. Most private organizations consider their HTA programmes to be proprietary.

3

Financing

Chapter summary

- The United States employs a mixed model of healthcare financing, with about half of expenditures paid for by government and the other half by private insurance and out-of-pocket payments.

- Only about one-third of Americans have government-sponsored coverage. Insurance through the employment sector is more common but does not comprise the majority of spending because those with government-sponsored coverage – the elderly, disabled and poor – are more expensive to insure.

- About one in ten Americans is uninsured, considerably lower than the one in six who lacked coverage in 2013, before the major elements of the Affordable Care Act (ACA) were implemented. Even among those with coverage, high out-of-pocket costs can be a barrier to receiving timely care and medications.

- Payment for health services in the United States depends on the service provided, the type of health provider making the service available, and the payer, as well as the type of facility and geographical location where the service is offered. Payment mechanisms for each type of health service (e.g. inpatient hospital care, prescription drugs) vary widely according to the payer involved.

- Out-of-pocket (OOP) payments (e.g. direct payment by consumers for health services, coinsurance, copayments and deductible amounts) per capita have increased substantially in real terms in recent years, though because of the growth in overall health expenditure, the percentage that OOP spending represents of total health expenditure has decreased.

- Over the years the country has displayed a great deal of organizational innovation, especially with regard to managed care. Health Maintenance Organizations (HMOs, which provide healthcare services on a prepaid basis through a network of providers) grew rapidly during the 1980s and early 1990s. Their market share has fallen substantially since then, however, due to a backlash against the tight restrictions put on patient choice. Preferred Provider Organizations (PPOs) have come to dominate the private insurance market.

3.1 Health expenditure

The United States spends far more money on healthcare than any other country, both on an absolute and a per capita basis. In 2017 total spending grew to $3.5 trillion (Martin et al., 2018). Table 3.1 shows US trends in spending from 1970 to 2018. After adjusting for inflation, real per capita expenditures increased by more than six-fold over this period and represented 17.7% of GDP in 2018.

The government sector has also experienced large increases in health expenditures over the past 40 years. Compared to 1990, in 2018 the public (federal, state and local) share of total national health expenditures increased nearly 13 percentage points, from 32.3 to 44.8. Currently, about half of each healthcare dollar in the United States is paid for by the government – a figure that would probably surprise those who think of the system as largely a private one. Similarly, the proportion of all government spending accounted for by healthcare has risen from 14.5% in 1970 to 28.0% in 2018.

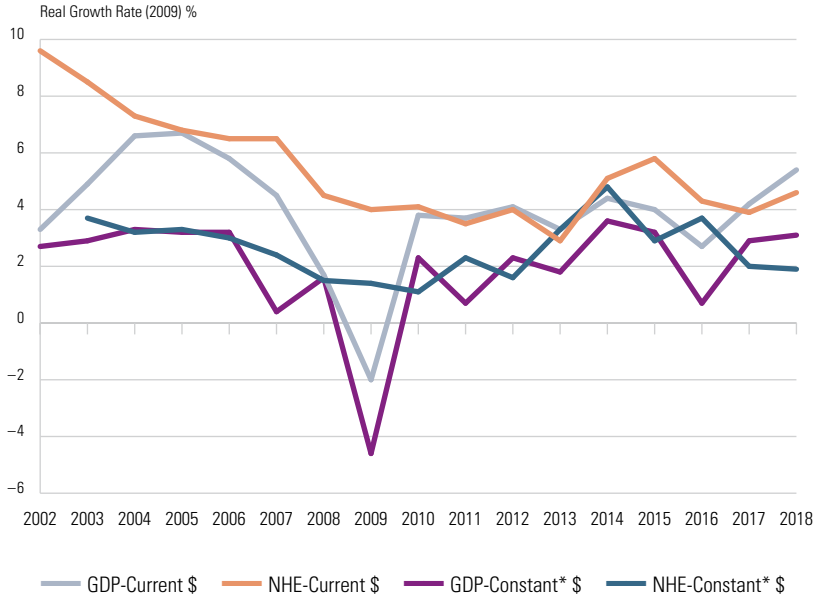
TABLE 3.1 Trends in US national health expenditures, selected years

	1970	1980	1990	2000	2010	2018
Current expenditure in $ billions	$75	$253	$714	$1 353	$2 600	$3 649
Real expenditure (2010) in $ billions	$308	$530	$989	$1 526	$2 600	$3 176
Current expenditure per capita	$356	$1 100	$2 814	$4 789	$8 417	$11 172
Real expenditure (2010) per capita	$1 464	$2 304	$3 897	$5 402	$8 417	$9 724
National health expenditure as a share of GDP (%)	6.9	8.9	12.3	13.6	17.9	17.7
Government health expenditures as share of national health expenditures (%)	37.5	42.1	32.3	35.5	44.4	44.8
Government health expenditures as share of all government expenditures (%)	8.9	11.6	14.5	19.0	24.0	28.0
Government health expenditures as % of GDP	2.7	3.8	4.9	6.0	7.9	8.0

Sources: CMS Office of the Actuary, National Health Statistics Group; US Department of Commerce, Bureau of Economic Analysis

The share of GDP represented by government spending on healthcare has almost tripled since 1970. According to the 2018 US Federal Budget, total spending on Medicare and Medicaid exceeded total spending on both the Department of Defense and Social Security, which provides retirement income to seniors (defined here as those aged 65 and older) and disabled populations (CBO, 2018a).

FIG. 3.1 Growth in real national health expenditures, selected years

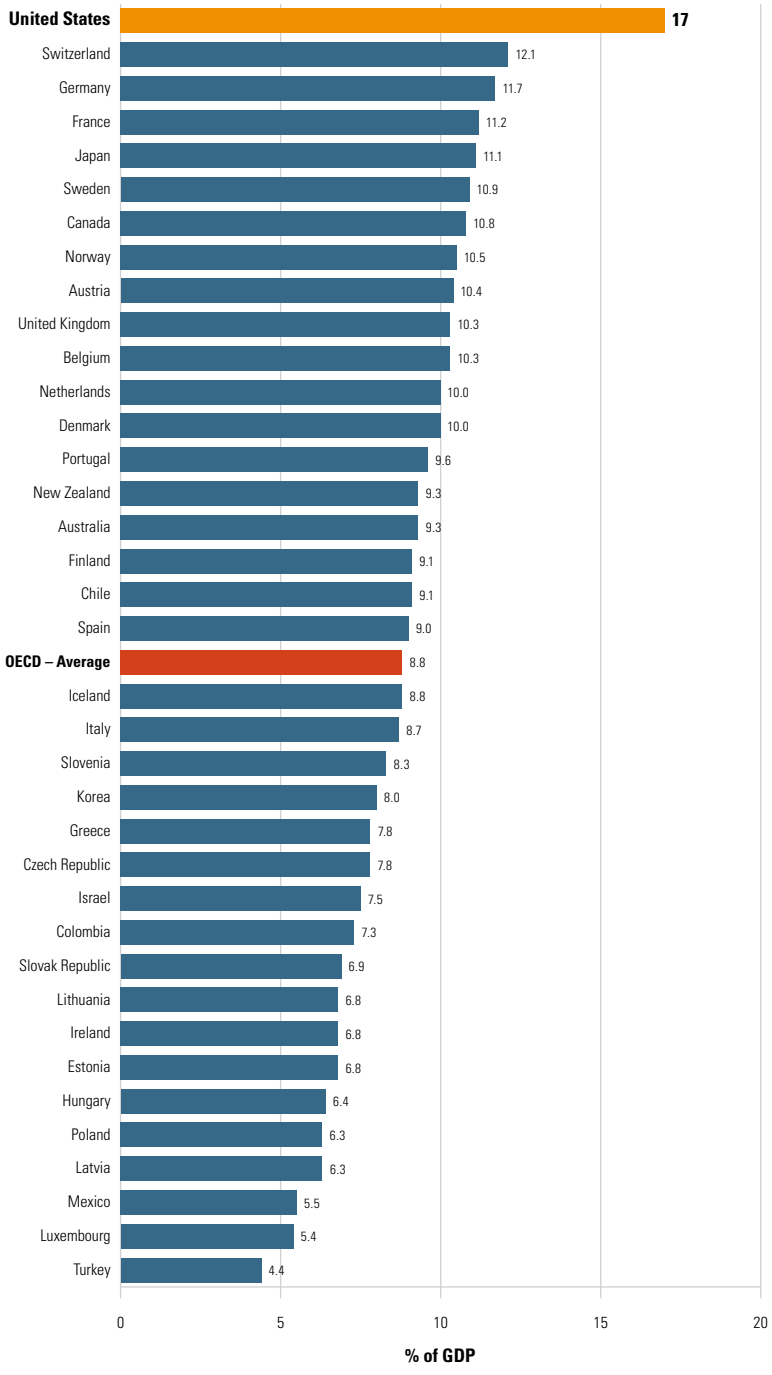


Notes: * Growth rate in 2009 constant dollars. NHE is national health expenditures, GDP is gross domestic product

Sources: Data from CMS Office of the Actuary, National Health Statistics Group; US Department of Commerce, Bureau of Economic Analysis

Historically, national health expenditure growth has outpaced that of the GDP (Fig. 3.1). Nevertheless, these growth rates have declined over the last 40 years. It is generally believed that the main factor for reduced growth rates in the 1990s was the proliferation of restrictive managed care practices. It is less clear why there has been a decline in the rate of growth since the mid-2000s. Part of the reason is probably related to financial constraints: it is difficult to afford sustained growth in healthcare spending when the national economy is largely stagnant. Prior to the ACA's coverage expansions, this has been illustrated by the growth in the number of uninsured, higher premiums and cost-sharing requirements borne by consumers, all of which quell service usage. It is also worth noting that, despite a lower rate of growth in national health expenditures, absolute spending has doubled within the previous two decades, from $1.5 trillion in 2000 to $3.2 trillion in 2018, so even lower rates of growth can still represent substantial increases in spending. Growth in spending increased in 2014 and 2015 as millions more Americans gained insurance but has since slowed due to decreases in utilization, including hospital and physician care and prescription drugs (Martin et al., 2018).

FIG. 3.2 Current health expenditure as a share (%) of GDP in OECD countries, 2019

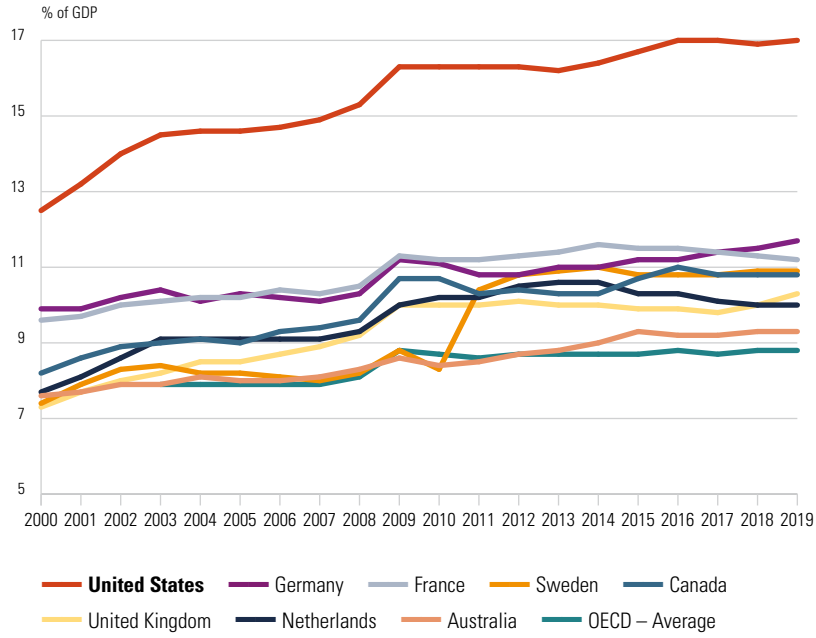


Note: Estimated values for 2019

Source: OECD Health Statistics Database, 2020

Total US healthcare spending as a share of GDP has consistently exceeded that of other OECD economies since 1970, and the gap is growing (Figs 3.2 and 3.3). In 2019 most European economies' healthcare spending accounted for 8–11% of GDP and only a handful of OECD countries (France, Germany and Switzerland), exceeded 11%, compared to 17% in the United States. While it is difficult to anticipate how much spending will grow in future years, especially in light of the recent system reforms, the US government currently estimates that by 2026 spending will rise to $5.7 trillion and comprise 19.7% of GDP (Cuckler et al., 2018).

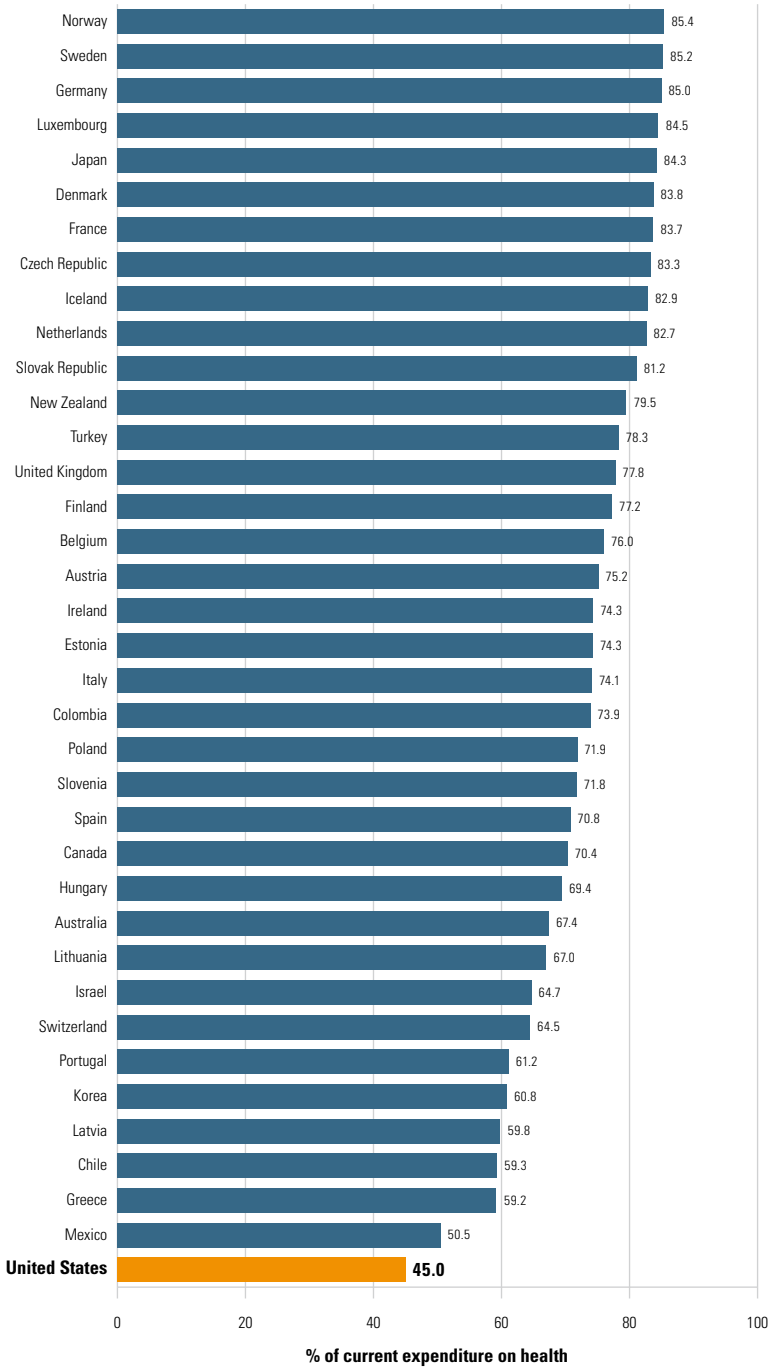
FIG. 3.3 Trends in current health expenditures as a share (%) of GDP in the United States and selected countries, 2000 to latest available year



Notes: Estimated values for 2019; 2011 Sweden break in series; Australia – different methodology

Source: OECD Health Statistics Database, 2020

FIG. 3.4 Public expenditures on health as a share (%) of current health expenditures in OECD countries, 2019



Notes: US data for 2018 from the CMS Office of the Actuary, National Health Statistics Group; for other countries, OECD estimated values for 2019

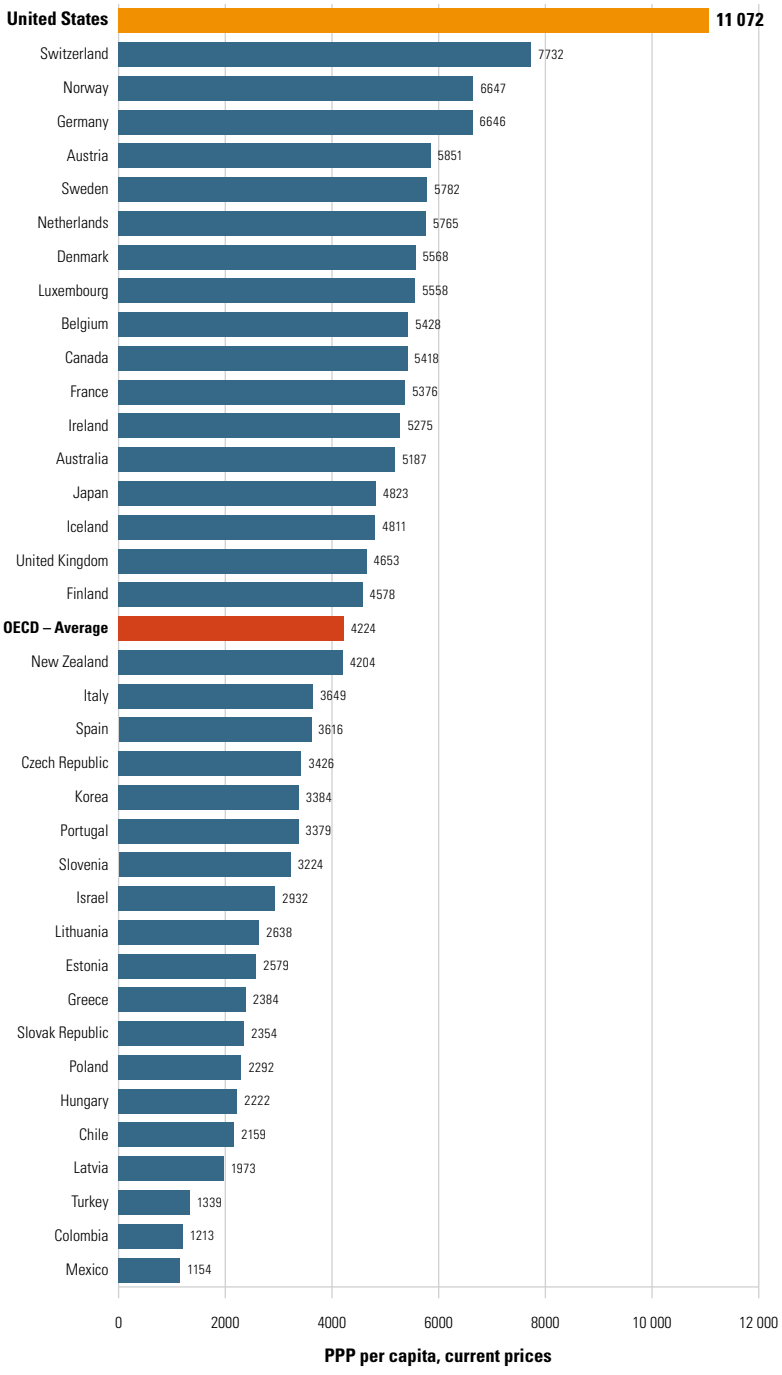
Sources: OECD Health Statistics Database, 2020; CMS, 2020

The portion of healthcare expenditures paid by the public sector in the United States was historically lower than in the other high-income OECD countries (Fig. 3.4), but it has risen sharply in recent years as a result of public coverage expansions under the ACA. The US figure of 45% in 2018 remains the lowest, far below the OECD median of 74.1%. As a proportion of GDP, public expenditures in the United States represented 7.9% in 2018, which was within half of a percentage point of other OECD nations such as Austria, Belgium, Denmark, the Netherlands, the United Kingdom and Switzerland, all of which cover a greater proportion of their populations with public health funding compared to the US (OECD, 2019).

Another issue is how growth in US healthcare spending compares to other countries. Per capita health expenditures in the United States have increased nearly 30-fold over the past almost 50 years (measured in US PPP dollars). This increase, however, is equivalent to or below increases experienced by Ireland, Japan, Korea, Norway, Portugal, Spain and the United Kingdom during the same period. Nonetheless, at $11 072 per person in 2019, the United States still spends more than twice as much per capita than the OECD country average in Fig. 3.5 ($4224) and 30% more than the second highest country, Switzerland ($7732).

Table 3.2 shows how health dollars are spent in the United States. Over the past 40 years, the share spent on hospitals has declined from 36% in 1970 to 33% in 2018. The shares of the total accounted for by other professional and personal healthcare, nursing home and home healthcare, prescription drugs and administration have increased. Conversely, the shares accounted for by dental services, other medical products and investment have fallen. In 2018 hospital care and physician and clinical services accounted for the majority of all healthcare spending in the United States (53%), with prescription drugs ranked third at 9%, and administration and other professional/personal healthcare next at 8% each.

FIG. 3.5 Current health expenditure in US$ PPP per capita in OECD countries, 2019



Note: Estimated values for 2019

Source: OECD Health Statistics Database, 2020

TABLE 3.2 Distribution of health expenditures by type of expenditure, selected years

	1970	1980	1990	2000	2005	2010	2018
Hospital care (%)	36	39	35	30	31	31	33
Physician and clinical services (%)	19	19	22	21	20	20	20
Other professional and personal healthcare services (%)	3	5	6	7	7	8	8
Dental services (%)	6	5	4	5	4	4	4
Nursing home and home healthcare (%)	6	7	8	8	8	8	7
Prescription drugs (%)	7	5	6	9	10	10	9
Other medical products (%)	7	5	5	4	4	4	2
Administration (%)	4	5	6	6	7	7	8
Government public health activities (%)	2	3	3	3	3	3	3
Investment (%)	10	8	7	6	6	6	5

Source: CMS, 2018c

Over the past two decades, a number of changes occurred in the distribution of national healthcare expenditures by health condition and service (Table 3.3). For example, in 1996 the largest share of expenditures went to treating heart conditions ($58 billion). The majority (65%) of this care occurred in the inpatient setting. By 2014, however, expenditures on treating heart conditions ($105.4 billion) were surpassed by mental health ($110 billion) and nearly matched by trauma-related disorders ($100.1 billion), even though, as noted in Section 1.4, heart disease remained the leading cause of death in the United States. With regard to cancer care in 2014, more was spent on treatment in outpatient (58%) than inpatient (27%) settings. This is a common trend across conditions, where a larger share of expenditures is moving from inpatient care to outpatient care and prescription drugs. Finally, spending on chronic conditions has increased during this period, as has spending on prescription drugs. For example, between 1996 and 2014 spending on diabetes, a leading public health concern in the Unites States (CDC, 2017d), increased six-fold, from $14.1 billion to $91.5 billion, with an increase in nearly 30 percentage points in the proportion of care managed through prescription drug treatment. Age-related chronic conditions such as

arthritis have experienced similar trends, with a four-fold increase in annual spending ($18.3 billion to $80.2 billion), and the proportion of spending on prescription drugs more than doubling over that period.

TABLE 3.3 National health expenditures by condition and service, selected years

1996							2014						
Condition	**Total ($B)**	**OP (%)**	**IP (%)**	**ER (%)**	**Rx (%)**	**HH (%)**	**Condition**	**Total ($B)**	**OP (%)**	**IP (%)**	**ER (%)**	**Rx (%)**	**HH (%)**
Heart conditions	58.0	14	65	2	7	12	Heart conditions	105.4	23	53	6	9	8
Cancer	37.7	28	62	0	4	5	Cancer	87.8	58	27	1	12	2
Trauma-related	37.1	39	37	15	2	6	Trauma-related	100.1	39	39	14	2	5
COPD, asthma	28.6	24	44	3	20	9	COPD, asthma	82.3	19	33	6	33	9
Mental disorders	28.2	29	29	1	18	23	Mental disorders	110.0	29	16	2	37	16
Normal birth	22.0	24	74	2	1	0	Normal birth	35.5	21	75	2	1	1
Arthritis and related	18.3	32	32	2	13	22	Arthritis and related	80.2	40	20	1	28	12
Hypertension	17.3	21	14	1	48	16	Hypertension	50.3	27	16	3	40	15
Diabetes mellitus	14.1	26	22	1	23	27	Diabetes mellitus	91.2	18	24	1	52	6
Cerebrovascular disease	12.6	5	67	1	3	24	Hyperlipidemia	36.2	28	3	0	63	5

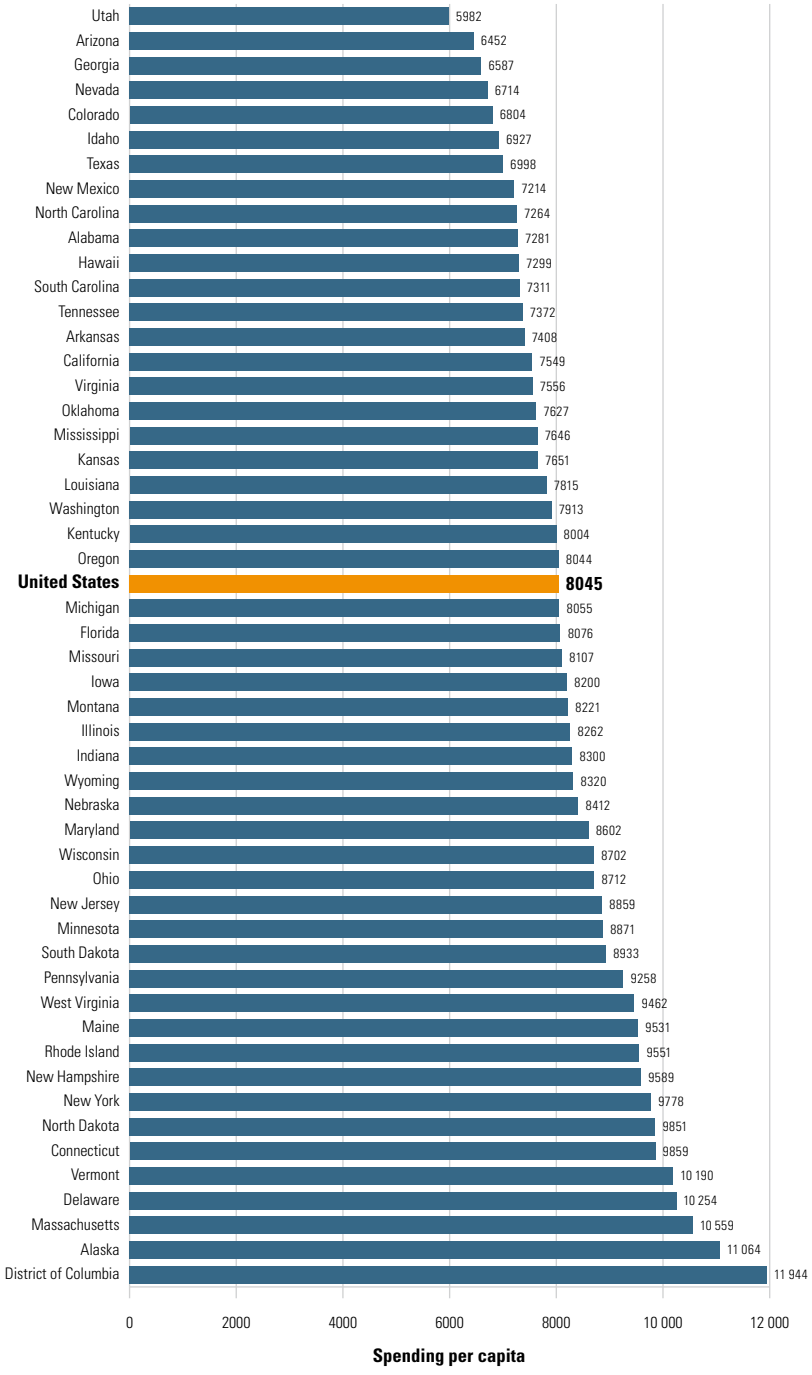
Notes: Services are defined as follows: outpatient (OP), inpatient (IP), emergency room (ER), prescription drugs (Rx), home health (HH)

Source: AHRQ, 2020

In addition to variation in spending by condition and type of service, the United States has wide variations in healthcare spending by state (Fig. 3.6). In 2014 per capita spending on healthcare ranged from about $6000 in Utah and Arizona to $12 000 in the District of Columbia, with a mean value of $8000 across all states. Many of the highest spending states were located in the Northeastern United States while the two most populous states, Texas ($7000) and California ($7500), were near the bottom of the distribution.

There has been a great deal of research on geographical differences in US spending and much debate about whether higher spending is correlated with better outcomes and healthcare processes. These issues are explored further in Chapters 5 and 7.

FIG. 3.6 Variation among US states in health expenditures per capita, 2014



Source: Kaiser Family Foundation, 2014

3.2 Sources of revenue, financing and financial flows

3.2.1 *Overview of sources of revenue*

The sources of revenue in the US healthcare system have changed considerably over the past 40 years. In 1970, 33% of funding was from OOP payments but that has fallen dramatically to 11% in 2016 (Table 3.4). There has been a concurrent growth in the portion paid by most of the other sources: private health insurance, Medicare, Medicaid and CHIP[4] (in 2016, 34%, 20%, and 17% respectively). As noted earlier, when combined, federal, state and local governments provided 45% of national healthcare expenditures in 2016, with the remainder paid for by businesses, households and other private revenues. The actual amount allocated to public coverage programmes in the United States is determined through the general budgetary process that begins early each fiscal year (see Box 3.1).

TABLE 3.4 Distribution of health expenditures by source of revenue (%), selected years

	1970	1980	1990	2000	2005	2006	2007	2008	2016
Private health insurance (%)	21	27	33	34	35	34	34	33	34
Out-of-pocket payments (%)	33	23	19	14	12	12	12	12	11
Other private (%)	9	8	8	8	7	7	8	7	4
Medicare (%)	10	15	15	17	17	19	19	20	20
Medicaid/SCHIP[1] (%)	7	10	10	15	16	15	15	15	17
Other government programmes (%)	20	17	15	13	13	12	12	13	10

Notes: [1] SCHIP (State Children's Health Insurance Program) is a US Department of Health and Human Services programme that provides matching funds to US states for health insurance to families with children

Sources: CMS Office of the Actuary, National Health Statistics Group

4 CHIP, the Children's Health Insurance Program, is a joint federal state initiative that finances health insurance to low-income families with children. It is discussed more in Section 3.4.

BOX 3.1 Overview of the federal government budgeting process

The actual amount allocated to public coverage programmes in the United States is determined through the general budgetary process that begins early each fiscal year when the President sends a proposed budget to Congress for consideration with detailed recommendations for healthcare programmes that involve federal government spending. The President's proposed budget is prepared over many months with input and assistance from several administrative agencies within the Executive Office of the President such as the Office of Management and Budget (OMB), the Government Accountability Office (GAO), and the US Treasury Department. Each federal executive department and independent agency has input into the President's budget request to Congress, including those involving the pooling of public funds for healthcare. The President's request to Congress is for the subsequent fiscal year. The budget reflects the current President's fiscal policy and is influenced by the desired level of spending, assumptions about revenues and goals for the deficit.

Congressional budget committees in the House and Senate each propose budget resolutions in response to the President's proposed budget. Each chamber passes a budget appropriations bill. The two chambers reconcile differences between House and Senate bills and vote on them. The appropriations bill (budget) is then sent to the President for signature. The President may veto the appropriations bill, in which case the Congress may override the veto with a 2/3rd vote in each chamber or modify it so as to obtain the President's approval. Congress almost always votes for different appropriations than the President's requested allocations for Medicare, Medicaid, the VA and other public healthcare programmes. It does so within the Congressional budgetary process that includes a complex set of rules and laws that govern Congressional action on the budget. This makes for a process that is informed by careful study within House and Senate budgetary and appropriations committees and subcommittees. Congress also relies heavily on information generated by expert agencies within and outside government.

Despite the expertise and objective data available to Congress, the budgetary and appropriations process is generally conflict-ridden, reflecting political divisions within the Congress. Congress sometimes combines the various appropriations bills generated by the Congressional budgetary process into an omnibus reconciliation bill. Reconciliation bills are 'utilized when Congress issues directives to legislate policy changes in mandatory spending (entitlements) or revenue programs (tax laws) to achieve the goals in spending and revenue contemplated by the budget resolution' (US Department of State, 2011).

In the Senate the reconciliation procedure is designed to avoid the filibuster process. Under that process, it takes 60 of the 100 Senators to advance

legislation. Reconciliation bills, which require only a majority of the Senate members agreeing, usually condense especially contentious or controversial budget measures proposed by various legislative committees into one piece of legislation. Much healthcare legislation and changes to existing healthcare programmes have been included in these reconciliation bills in the last few decades, including the ACA. This is further discussed in Chapter 6.

3.2.2 *Financing and financial flows*

Financing in the US healthcare system originates from employers, employees and individuals. From them, financing flows to private insurers and health plans (see Box 3.2 for definitions of insurers and health plans), as well as to state and federal governments. Private and public purchasers then transfer dollars to providers through a variety of payment mechanisms. Fig. 3.7 depicts financial flows in the US healthcare system.

Beginning with the left-hand side of the figure, employers, employees, individuals and charities pay into the healthcare system through various taxes, premiums and other OOP expenses, and donations. Healthcare financing by employers includes payments in the form of corporate taxes to general federal and state revenue funds. Corporate tax rates were historically progressive, varying from 15% at the lowest levels of corporate income up to 35%, but as of 2018 face a flat 21% tax rate. Firms also contribute to private health insurance by paying all or part of employee health insurance premiums. Both employers and employees contribute equally through a mandatory payroll tax to fund the Hospital Insurance part of Medicare (Part A). In 2018 employers and employees each paid 1.45% of an employee's income – in addition to a larger contribution to fund Social Security retirement income. The ACA increased this contribution for wealthy individuals (see Section 3.3.2). The self-employed are responsible for the entire 2.9% share of the Medicare payroll tax.

BOX 3.2 Insurers and health plans

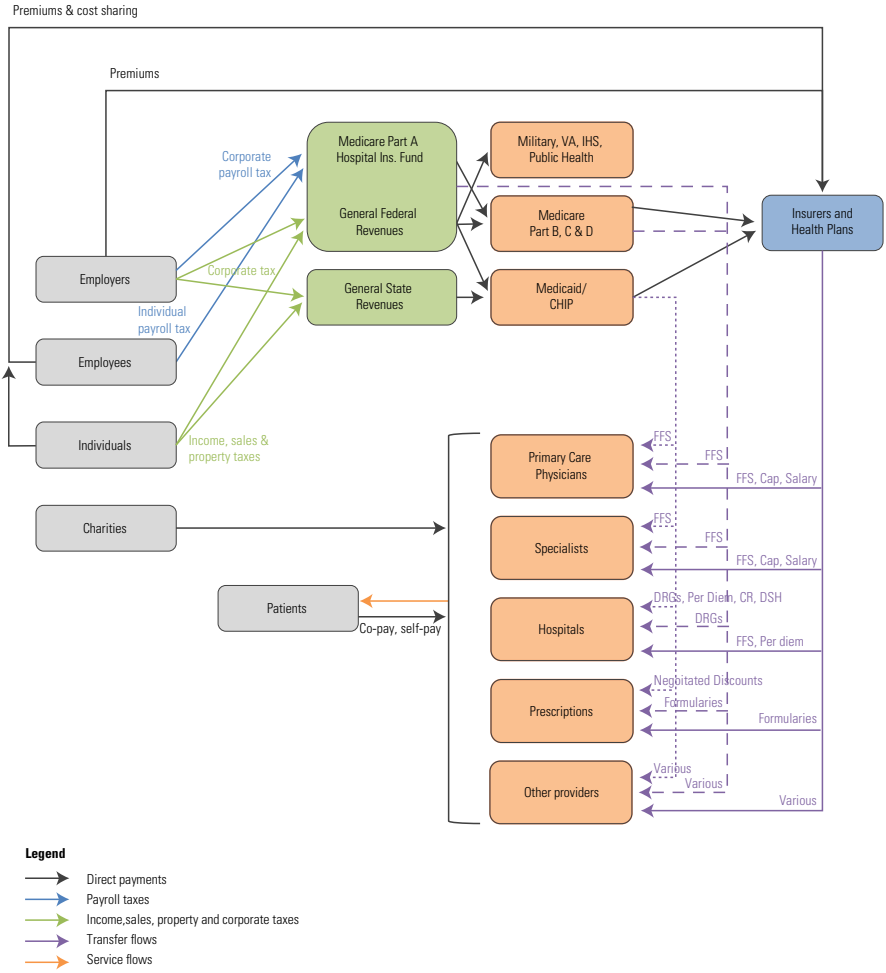
In the United States the terms 'health insurers' and 'health plans' are often used synonymously. In keeping with that, this review uses the terms interchangeably. While the term 'health insurer' is generally well understood as a public or private organization that provides protection against healthcare costs in return for a premium (or some other criterion determining eligibility such as income and assets in the Medicaid programme), the term 'health plan' is used much more broadly.

To illustrate, the US Code of Federal Regulations (Section 160.103) lists 17 different entities that, either individually or in combination, constitute 'health plans'. These include: health insurers, employer-group products, HMOs, Medicare FFS, Medicare Advantage (Part C), Medicaid, state Children's Health Insurance Programs, an issuer of Medicare supplemental insurance or long-term care, the programmes providing for active military personnel, veterans and Native Americans, the Federal Employees Health Benefits Program, high-risk pools established by states, or 'any other individual or group plan, or combination of individual or group plans, that provides or pays for the cost of medical care'. Thus, the exact entity to which the term 'health plan' refers can be understood only in context.

The ambiguity of the term may date back to the growth of managed care around the 1990s. Previously, it was probably accurate to refer to managed care companies as either being HMOs or PPOs. Eventually, though, these organizations began to offer a choice of several distinct products that could include both financing and delivery of care: HMOs, PPOs, POS plans and, later on, high-deductible plans, some of which include tax-advantaged savings vehicles. Some of these companies still continued to offer traditional health insurance products. The term 'health plan' is therefore often used to denote the companies that offer a large array of financing and delivery products. The five largest private firms that sell health plans in the United States are United-Health Group, Anthem, Aetna, Humana and Cigna.

Most health plans offer a variety of different coverage arrangements. These 'products' or 'policies' are also referred to as 'plans'. Again, the terms are often used interchangeably. The clearest way to denote these might be to call the different arrangements (e.g. HMO, PPO, high-deductible plan) 'products', and the contract or agreement between the organization and the individual as 'policies', but in common parlance they are frequently called 'plans'. For example, Anthem offers a variety of products to employers, one or more of which are PPOs. A person who works for the employer and who chooses one of the PPO products would be said to have health insurance coverage with Anthem. That is, Anthem is their health insurer offering a PPO health plan.

FIG. 3.7 Financial flows



Source: Authors' elaboration

Employed persons and their families contribute to private employer-sponsored insurance through premiums and cost-sharing. Individuals may also purchase non-group coverage outside the employment market. In addition to payroll taxes, individuals contribute to general federal and state revenue funds to finance public healthcare coverage through income (and sometimes) sales and property taxes (depending on state of residence). Federal tax rates on individuals and families are progressive, ranging from 12% to 37% of taxable earnings. State income tax rates vary considerably across the United States. Seven of the fifty states levy no income tax, and two states tax only dividend and interest income. Several states have flat income tax rates while others, such as California, similar to the federal government,

tax the wealthier more (the rate for the wealthiest Californians is 13.3%). Furthermore, some cities, such as New York City, also levy income taxes. Similarly, sales taxes, which are levied by states, also vary, with five states having no sales taxes and the remainder having rates varying from 2.9% to 7.3%. Some states exempt food or other necessities from sales taxes. There is no value added tax (VAT) in the United States, and proposals to enact a VAT have never been seriously considered by Congress. Property taxes, the rates of which also vary across the country (and average about 1% of home value), are generally collected on a sub-state (county) basis and are used to fund local programmes, which include public primary and secondary education, as well as safety-net healthcare services. The wide variation in public financing for coverage programmes between states contributes to the discrepancy in populations and services covered by state-sponsored and state/federal-sponsored public programmes, particularly Medicaid (see Section 3.4).

Care for low-income and uninsured individuals is financed through a variety of mechanisms. Private charities, with monies from donations and endowments, assist individuals without health insurance and some special needs populations to purchase healthcare services. As discussed further in Chapter 5, health services for the uninsured are often provided by a safety-net system of public and community clinics, as well as by hospitals and physicians. Some funding comes from general tax revenues but in many cases the care received is uncompensated and therefore is borne by providers. It is estimated that of the $84.9 billion in uncompensated care expenditures in 2013, hospitals contributed 60%, and physicians 14%, with the remainder coming from a variety of community organizations (Kaiser Family Foundation, 2017b). In 2016 hospitals provided $38 billion in uncompensated care, only 65% of which was covered by government funding (Khullar, Song & Chokshi, 2018). However, increased access to health insurance as a result of the ACA has reduced the burden of uncompensated care for hospitals, with states that chose to expand Medicaid experiencing the largest benefits. Between 2013 and 2015 the uninsured dropped from 14.5% to 9.4%, and hospitals experienced a 30% drop in uncompensated care costs as a share of hospital operating expenses (Schubel & Broaddus, 2018). Patients can also pay for services directly (e.g. self-pay or uninsured) or may be insured but have co-payments to make at the time services are received.

Revenues from the sources described above are paid to federal and state government, insurers and health plans, or directly to providers. Payroll taxes flow to the Hospital Insurance Fund at the federal level. Revenue

from this fund finances Medicare Part A, and the Part A component (mainly hospital care) of Part C coverage. Federal general revenue funds allocate dollars to Medicare (Parts B, C and D) and both federal and state general revenues are used to fund Medicaid programmes or other federal, state and local health agencies. Revenues from Medicare, Medicaid and insurers and health plans are transferred to providers through a variety of payment mechanisms. Payments from Medicare and Medicaid are made directly to providers or indirectly through insurers and health plans that provide managed care coverage to beneficiaries (e.g. Medicaid managed care organizations or Part C Medicare Advantage plans). The following paragraphs briefly describe the payment mechanisms by which revenues are transferred to providers (more detail on provider payment mechanisms is provided in Section 3.7).

Medicare Part B insurance pays primary care physicians and specialists on a fee-for-service (FFS), or retrospective, basis using a predetermined fee schedule. Conversely, Medicare hospital payments (Part A) are prospective and based on DRGs.

Medicare Part D subsidizes premiums for prescription drug coverage provided by private insurance organizations. Each of the private prescription drug plans establishes its own formularies determining which drugs will be paid for by the plans, subject to certain Medicare restrictions.

Depending on the state Medicaid programme, Medicaid may pay primary care doctors and specialists directly on a FFS basis. Alternatively, Medicaid may pay private managed care organizations a capitated rate and the MCOs then pay primary care doctors and specialists on either a capitated or FFS basis. Medicaid payments for hospital services vary by state and fall into three groups: DRGs, per diem and cost reimbursement (CR). Hospitals serving a large proportion of Medicaid and uninsured patients can be designated as disproportionate share hospitals (DSHs) and receive additional payments from states. Under the ACA, DSH allotments to states were reduced beginning in 2014. Medicaid pays for prescription drugs based on negotiated discounts. Among the services falling under 'other providers', Medicaid is the primary source of funding for long-term care services, paying for more than 51% of all long-term care (Kaiser Family Foundation, 2015).

Health plans transfer payments to primary care physicians and specialists on a FFS, capitated or salary basis (i.e. salaried physicians employed by a health plan). Hospital services are paid for by insurers and health plans using primarily per diem payments typically negotiated between each

hospital and insurer on an annual basis. Similar to private health plans in Medicare Part D, insurers and health plans pay for prescription drugs based on formularies. Subsequent sections in this chapter provide greater depth on the sources of revenue in the US healthcare system, financing as it relates to Medicare, Medicaid and private insurers, the scope of OOP costs, and payment mechanisms to providers.

POOLING OF FUNDS AND RISK

How funds and risk are pooled varies widely across types of insurance coverage in the United States: Medicare, Medicaid, employer-based insurance, the VA, the independent insurance market, etc. Revenue flows from collection agencies and individuals to pooling agencies but, depending on the type of coverage, this may involve transfers from a taxing agency to a public statutory programme or from individuals to a private insurance company.

Risk pooling is defined here as the formation of a group so that the costs of individual health risks can be shared among everyone in the group. For some types of insurance coverage in the United States (individual insurance market and markets for small and medium-sized businesses) there was little pooling of risk at all prior to implementation of the ACA, while in others it has been substantial (Medicare). This is because private insurers, upon which the individual and employer-group health insurance markets rely, generally use experience rating, where different groups and individuals are charged premiums based on their expected costs (based on the individual's health status or the overall health status in the group), while Medicare charges the same premiums to everyone (except for some of the very wealthy, who pay more, and the poor, who are subsidized) irrespective of health status and costs.

3.3 Medicare

The next three sections discuss the major sources of coverage in the United States. Table 3.5 presents a summary of the sources of healthcare coverage, how they are financed, who is eligible, and the breadth, depth and scope of coverage as of 2017. Unlike citizens in other high-income countries, only a minority of the US population is covered by the public financing system,mainly through Medicare (seniors and the disabled) and Medicaid (poor and near-poor); the latter is discussed in Section 3.4. Rather, a majority of the population receives their coverage from private health insurance and most of them obtain it through an employer (Section 3.5).

TABLE 3.5 Major sources of health coverage in the United States in 2017

SOURCE	FINANCING	ELIGIBILITY	SCOPE OF COVERAGE	NUMBER (%*) COVERED
MEDICARE				58.5 million (18% of US population)
Part A	Employer and employee payroll tax – 1.45% each. The ACA also included a 0.9% 'Additional Medicare Tax' for high-income individuals	65 and older, disabled, renal failure	Hospital	38.3 million
Part B	Premiums and federal general revenues		Physician services	Over 90% of those with Medicare voluntarily enroll in Part B
Part C	Not financed separately but a private insurance vehicle for receiving Medicare benefits. May require a monthly premium, depending on plan selected		Hospital and physician services. Optional on part of insurer: prescription drugs, vision, hearing, dental	32% of those with Medicare are covered through Part C (Medicare Advantage) plans
Part D	Premiums, federal general revenues, state general revenues for dual eligibles		Outpatient prescription drugs	75% of those covered by Medicare also have Part D coverage

SOURCE	FINANCING	ELIGIBILITY	SCOPE OF COVERAGE	NUMBER (%*) COVERED
Medicaid	Federal-state matching using general revenues from each	Varies by state but broadly, pregnant women and children 6 years or younger at or below 133% FPL, children 6–18 years up to 100% FPL, and low-income disabled, seniors, and parents of dependent children	Generally, hospital, physician, long-term care. Varies by state – dental, vision, prescription drugs	74 million (27% of US population)
Other public sources	Includes Veterans Affairs, TriCare, funded by general federal revenues	Mostly veterans (VA) and active duty military and their families (TriCare)	Hospital, physician services, prescription drugs, vision, hearing, dental	Approximately 9 million (3% of US population), but many use other coverage instead or in addition
PRIVATE INSURANCE				
Employer sponsored	Employer and employee premiums	Varies by firm size, type of position, tenure with employer, spouse or child of someone covered	Hospital, physician services, prescription drugs, vision, hearing, dental	151 million (46% of US population)
Individual **	Premiums	None	Hospital, physician services, prescription drugs, vision, hearing, dental	22 million (7% of US population)
Uninsured	Self-pay, charity care	None	None	28 million (9%) ***

Notes: * The US population was approximately 326 million in 2017

** About half of individual, private policies are bought through the ACA exchanges, more than 80% of which received federal premium subsidies. The other half are purchased directly (and without subsidy) from insurance companies

*** Data on number of uninsured are from 2016

Sources: CMS, 2018c; Claxton et al., 2017; Kaiser Family Foundation, 2018b

It is noteworthy, however, that the ACA expanded both the public and private sectors, both of which resulted in a decline in the number of uninsured persons (see Box 3.4) More uninsured poor and near-poor individuals and families are receiving Medicaid coverage in the states that chose optional expansion, and many others who are uninsured, whose incomes are too high to qualify for Medicaid, are receiving subsidies that are used to purchase private health insurance. Before discussing these types of coverage, however, the Medicare programme is described.

3.3.1 *Coverage*

BREADTH OF COVERAGE

The Medicare programme provides health insurance coverage to nearly all Americans aged 65 and older, as well as to many disabled Americans – those who have received federal disability payments for two or more years, as well as people with end-stage renal disease and amyotrophic lateral sclerosis (ALS) (64 million people, 18% of the total US population in 2018). Medicare is divided into four parts, labelled Parts A, B, C and D.

- *Part A, Hospital Coverage* includes not only hospital care, but also some post-acute nursing home, home health and hospice care. Individuals and their spouses aged 65 and older who worked for at least 10 years during which time they contributed federal payroll taxes that supported both Social Security (the US statutory retirement pension system) and Medicare are entitled to Part A coverage. In 2017, 58.5 million people were enrolled (CMS, 2018a).
- *Part B, Supplemental Medical Insurance* is a voluntary programme with essentially the same eligibility requirements as Part A. It covers physicians' services (both inpatient and outpatient); outpatient care; medical equipment, tests and X-rays; home healthcare; some preventive care; and a variety of other medical services. Despite its voluntary nature, over 90% of those eligible enroll in it because it is heavily subsidized, as discussed in Section 3.3.2.
- *Part C, Medicare Advantage* is an alternative to Parts A and B. Enrolment is voluntary. It provides coverage for the same services and, at the discretion of the organization offering coverage, sometimes additional benefits such as vision, hearing and/or dental care. One of the main differences between Part C and the preceding two parts, which are sometimes called 'traditional Medicare', is that Part C coverage is offered through private organizations (e.g. insurers and HMOs). Put another way, when a beneficiary receives a service under Part A or B, the Medicare programme pays the provider directly for services (though payments are processed through private organizations called Medicare Administrative Contractors (MACs)). In contrast, under Part C, Medicare pays

the Medicare Advantage plan a fixed amount of money per month for each enrollee based on the characteristics (e.g. demographics, medical diagnoses) of the particular enrollees in the plan. (The formula is a complicated one that has been revised several times over the years.) Enrollees sometimes also pay a premium to the Part C health plan depending on the size of the plan's bid for providing services; the average in 2017 was $36 per month (Kaiser Family Foundation, 2017c).

Research has shown that, historically, Part C plans have been paid more than their costs (CBO, 2007). As a result, the ACA introduced significant changes to payment rate calculations in order to reduce the gap between payment and average expenditure per enrollee. These efforts have been successful: average payments to Part C plans were 114% of traditional Medicare spending per enrollee in 2009, and by 2018 that figure had been reduced to 101% (Skopec et al., 2019). For this payment, a Part C organization is responsible for providing or paying for the service, enjoying part of the financial gain from excess revenues and being at risk of financial loss for shortfalls. A second difference from traditional Medicare is that Medicare Advantage plans tend to cover beneficiaries living in a defined geographical area, covering one or more counties (a geographical subdivision of a state). Thirdly, plans compete with one another in part on the basis of premiums. That is, rather than all beneficiaries paying the same premium, as they do under Part B, in Part C each plan sets its own premium, which will depend not only on the costs of providing required services but also whether additional benefits are offered. Premiums are paid directly to health plans. Fourthly, as noted, most Medicare Advantage plans offer coverage for some types of services not covered by Parts A and B, such as vision, hearing or dental care.

The specific benefits under Part C depend on the type of health plan in which a beneficiary enrolls. HMOs are the most common, followed by PPOs and private FFS plans. The last of these is different from the others in various ways: enrollees are generally not limited to a particular network or providers; providers can charge more, meaning that OOP expenses can be higher than with other Part C plans such as HMOs; and physicians typically are paid on a FFS basis. The law allowing for private FFS plans

was established by Congress in 1997 as an option for beneficiaries who did not want to be subject to utilization management techniques typically used by managed care plans (Miller, 2007).

In 2017, 34% of Medicare beneficiaries were enrolled in Medicare Advantage plans, nearly 50% higher than just five years before. The remaining 65% remained in 'traditional Medicare'. While it was anticipated that cuts in payment to Medicare Advantage plans under the ACA would reduce enrolment by as much as 35%, this did not occur, with the proportion of beneficiaries joining them continuing to rise through 2017. This appears to have occurred because plans responded to payment reductions by reducing their costs, while still offering optional benefits not available through traditional Medicare (Guterman, Skopec & Zuckerman, 2018).

- *Part D, Prescription Drug Coverage* began in 2006 and is also voluntary. Prior to that, Medicare did not provide coverage for prescription drugs received outside hospital. Similar to Part C, Part D benefits are provided through private organizations (usually insurers, HMOs or PPOs). In 2018 there were typically two dozen choices among Part D plans in each state – in addition to dozens of Medicare Advantage plans providing drug coverage in many urban areas. Like Part C, premiums and benefits vary by plan, with competition occurring based not only on premium differences, but also on differences in benefits and, in particular, the drugs that are included on a plan's formulary that are listed as 'preferred' drugs and which therefore are subject to lower or zero patient co-payments.

About 75% of Medicare beneficiaries are covered under Part D – about 60% from 'stand-alone' plans that provide coverage only for prescription drugs, and the remaining 40% from the drug benefits provided through Medicare Advantage plans (Kaiser Family Foundation, 2019b). Most other beneficiaries have drug coverage from another source, such as from a former employer, but 15% do not have any drug coverage (Kaiser Family Foundation, 2019b).

SCOPE OF COVERAGE

In general, Medicare covers most medically necessary services as determined by providers. Unlike many private health insurance plans, pre-authorization is not required for hospitalizations. With the onset of coverage of outpatient prescription drugs in 2006, and the gradual increase in coverage for preventive services in recent years (which is being expanded through the ACA), the main services not covered are extended long-term care and dental care. There are a few other explicit exclusions: cosmetic surgery, acupuncture, hearing aids and, except in limited circumstances, glasses. Some of these services, however, are covered under selected Medicare Advantage plans.

The largest of these excluded services is extended long-term care. Precisely which services are covered by Medicare is rather complex because the programme does include some coverage for nursing home and home healthcare. This coverage, however, is aimed at acute-care illnesses. Skilled nursing care must be deemed medically necessary by a physician; custodial care is not covered. Moreover, nursing home care can only be covered if it follows an inpatient hospital stay of at least three days and coverage is provided for a maximum of 100 consecutive days.

Medicare is not involved in determining whether a particular service to a specific beneficiary is covered. Rather, these decisions are generally made by private organizations that contract with Medicare. This is a result of a compromise between legislators and providers to assuage provider concerns about the government making coverage decisions, dating back to the mid-1960s when the Medicare legislation was being debated in Congress. Under Parts A and B, Medicare contracts with Medicare Administrative Contractors (MACs). Coverage decisions are made directly by the private health plan under Parts C and D. The Medicare programme has a formal appeals process when disputes occur (see Section 2.9.4).

DEPTH OF COVERAGE

As implied above, Medicare coverage is both broad and wide: nearly all seniors are covered and almost all services are covered, the two major exceptions being long-term care and routine dental care. Coverage is not as deep, however. As a result, almost 90% of all beneficiaries obtain some

form of supplemental insurance coverage. In 2015 Medicare paid just over half – 54% – of total medical and long-term care expenses. Another 9% was paid on behalf of beneficiaries by Medicare Advantage (Part C) managed care plans; an additional 7% was paid by private payers (including employers and Medigap insurers); 7% was paid by Medicaid on behalf of low-income beneficiaries; 6% was paid by miscellaneous sources including the Veterans Health Administration, and the remaining 17% constituted direct, out-of-pocket spending. Note that the above figures do not include premium payments made by beneficiaries (computations made by Kaiser Family Foundation for the authors based on 2015 Medicare Current Beneficiary Survey Data).

Coverage for hospital care under Part A contains two significant gaps. Firstly, there is a deductible for each inpatient hospital stay; in 2018 the amount was $1340. Secondly, for those rare stays that exceed 60 days, there are substantial *daily* co-payments: $335 per day for days 61–90 and $670 per day for days 91–150[5]. There are no monthly premiums for Part A.

As noted, Part A's nursing home coverage is limited because it is only for short-term skilled care following a hospital admission, rather than for long-term care. For eligible stays, up to 100 days are covered. During the first 20 days there are no co-payments, but there is a substantial *daily* co-payment for days 21–100 of a stay: $168 in 2018. In contrast, there is no co-payment for home healthcare services.

Coverage for physicians' and other medical services under Part B are also subject to patient cost-sharing. The patient is responsible for 20% of all covered expenses (with no maximum) after meeting an annual deductible of $183 in 2018. The 20% coinsurance requirement is perhaps the main reason why the vast majority of Medicare beneficiaries seek some form of supplemental insurance coverage, which is discussed below. Monthly premiums vary by income; individuals with incomes below $85 000 or couples with incomes below $170 000 paid $134 per month in 2018. Those with higher income pay considerably more. Premiums are often deducted from Social Security payments.

It is difficult to generalize about the depth of coverage under Part C because each plan has its own benefit structure. Federal minimum

5 Medicare's benefit structure is based on a 'benefit period', which begins with a hospitalization and ends after 60 days have elapsed from discharge from a hospital or nursing home. The benefits mentioned in the text apply to each benefit period, with the exception of the 60 lifetime-reserve days, which can be used only once and are subject to the same substantial daily co-payments discussed above.

requirements are that coverage be at least as comprehensive as under Parts A and B. As noted, most Part C plans offer additional services, including prescription drug coverage. Those enrolling in Part C generally are required to pay the $134 Part B premium, and many pay additional amounts based on the total cost of the plan they choose.

Beneficiaries obtain outpatient prescription drug coverage in one of three ways: a Part C Medicare Advantage plan (discussed above), a stand-alone drug insurance plan called a Prescription Drug Plan (PDP) under Part D of Medicare, or employer-provided job or retiree health insurance coverage. In 2018 premiums for PDPs averaged $43 a month (Kaiser Family Foundation, 2019b).

Whereas Part D drug benefits vary depending on a particular plan's benefit structure, there is a standard benefit structure that health plans are allowed to offer that in 2018 had the following benefits. The beneficiary paid a $405 annual deductible for drug expenses. For annual drug spending between $405 and $3700, the plan paid 75% of expenses and thus the beneficiary was subject to a 25% coinsurance rate. After that, the beneficiary enters the 'doughnut hole' where there is no coverage at all. After spending $5000 annually in out-of-pocket costs, Medicare generally covers 95% of remaining costs. Importantly, even 5% patient cost-sharing can cause considerable financial harm for those with chronic diseases who use extremely expensive brand-name drugs. At the time of writing various Congressional legislative proposals are being considered to deal with this problem.

As noted, almost 90% of Medicare beneficiaries have some form of supplemental insurance coverage. The main sources in 2013 were (Kaiser Family Foundation, 2017d):

- Former (and occasionally, current) employers: 22% of beneficiaries have such coverage. It is considered desirable because it often covers a greater share of expenses than private ('Medigap') insurance and because premiums are usually partially subsidized by the employer.
- Medicare Advantage plans: 34% have this form of coverage. It is usually included as a form of supplemental insurance because, as noted, these plans tend to cover some expenses beyond what is paid for by Parts A and B.

- Medicaid: 15% have this coverage, which is available to Medicare beneficiaries with low incomes and assets. This group, which qualifies for both Medicaid and Medicare, is referred to as 'dual eligibles'. It covers most services at zero or nominal costs. Of note is the fact that Medicaid often becomes a payer of last resort when a beneficiary is institutionalized in a nursing home and 'spends down' their income and assets.
- Medigap: 15% of beneficiaries purchase (unsubsidized) private health insurance. Premiums vary by health plan; to illustrate, the annual premium cost of the most popular benefit configuration in California in 2010, for a 65-year-old woman, varied from $1626 (from the lowest cost insurer) to $5467 (the highest cost insurer) (California Department of Insurance, 2010).

The Medigap market is unusual in two respects. Firstly, unlike most other types of insurance, in which states are responsible for insurance regulation, Medigap is subject to strong federal oversight. Secondly, Medigap policies must conform to strict benefit standardization requirements; health plans are only allowed to sell benefit configurations that exactly match federal standards. This facilitates comparison shopping; once the beneficiary chooses among the modest number of benefit designations desired, all insurance plans must provide exactly those (and no more) benefits, which means that the beneficiary mainly needs to compare premiums across the various plan choices.

3.3.2 *Revenue collection*

Revenue collection differs among the various parts of Medicare. Part A was designed to be a social insurance programme, and accordingly it is financed almost entirely (excepting beneficiary cost-sharing requirements) through a payroll tax with nearly all seniors as well as many disabled Americans automatically eligible for coverage. Parts B and D, in contrast, are voluntary and funded by a combination of general revenue and premium contributions by beneficiaries. Part C is funded by sources similar to Parts A and B.

OVERVIEW OF MEDICARE EXPENDITURES

In 2016 total Medicare expenditures were $679 billion (Boards of Trustees, 2017). It is difficult to break this down by type of service because that is only done for the 66% of beneficiaries who are not in Medicare Advantage plans. Among those in the so-called 'traditional' (FFS) Medicare, 30% is spent on inpatient hospital care and 14% on physicians' services. Other key components are outpatient prescription drugs (20%) and hospital outpatient services (10%). In spite of the fact that Medicare services seniors and the disabled populations, just 10% was spent on nursing home and home healthcare. This reflects the programme's traditional orientation towards covering acute rather than long-term care (CMS, 2012a).

REVENUE IN THE FOUR DIFFERENT PARTS OF MEDICARE

Workers in the United States and their employers are subject to a mandatory payroll tax that fully funds Part A of Medicare. Since 1990 the rates have not changed; they are 15.3% of payroll up to a 'taxable maximum', evenly split between the employer and employees. Self-employed individuals are responsible for paying the entire amount themselves. Of the 15.3%, 12.4% is earmarked for Social Security (the federal pension system) and 2.9% for Part A of Medicare. Because employees are often unaware of their employer's contribution, they may think of the tax as being a total of 7.65%.

The system is somewhat regressive because the Social Security component of the tax applies only to the first $128 400 of earned income in 2018. This is ameliorated somewhat, however, because since 1994 there has been no taxable maximum on the Medicare component. The ACA increased the overall progressivity of the tax system by raising the Medicare tax by 0.9% for individuals earning more than $200 000, and married couples earning more than $250 000. In addition, it imposes an additional 3.8% tax on unearned (mainly, investment) income for these wealthier Americans, although this is not earmarked for Medicare.

Part B is funded by two sources. Premiums, which are paid monthly by beneficiaries as deductions from their Social Security cheques, cover 25% of total revenue. The remaining amount is paid by general federal revenues. In 2018 the premium for most beneficiaries was $134 per month. Those with incomes above $85 000 (individual) or $170 000 (family) pay more on a sliding scale.

The Supplementary Medicare Insurance (Part B) Trust Fund's adequacy is not of great significance because each year, Part B premiums and general revenues are re-set so as to meet projected expenses. In contrast, with regard to the Hospital Insurance (Part A) Trust Fund, each year the Board of Trustees reports on the solvency of the Fund, going 75 years into the future. In their 2017 report the Trustees indicated that the Trust Fund was projected to be depleted in 2029. Nevertheless, the report noted that the future solvency of the Trust Fund will depend heavily on how successful Medicare is in controlling future expenditures (Boards of Trustees, 2017), calling on the government to 'address Medicare's remaining financial challenges', preferably 'in the near future' (p. 9). It should be recognized, however, that even if the Trust Fund becomes depleted, the amount of the deficit will be relatively small in the short run, giving Congress time to adjust benefits downwards or revenue upwards. Moreover, the projects only apply to Part A of Medicare. Parts B (physician) and Part D (prescription drugs) are covered by general federal revenues and individual premiums and thus are not subject to solvency concerns (van de Water, 2018).

The funding sources for Part C are the same as noted earlier for Parts A and B. Some companies charge a premium in addition to the Part B premium, but others do not. On average, in 2017 the monthly premium for Part C plans covering prescription drugs was $36, in addition to the Part B premium (the latter of which is usually required for Part C coverage (Kaiser Family Foundation, 2017d).

Similar to Part B, Part D is subsidized through general federal revenues, which pay for 74.5% of programme costs. Most of the remainder of the funding comes from beneficiary premiums. The federal government also contributes towards the premiums and cost-sharing requirements of low-income Medicare beneficiaries. While there is not a Trust Fund *per se* for Part D, there is a 'Part D account' that is under the purview of the Board of Trustees.

3.3.3 *Pooling of funds and risk in Medicare*

In Medicare there are separate Trust Funds for Parts A and B to pool revenue. In considering the Trust Funds, it is necessary to understand that Medicare, in the same way as Social Security pensions, is funded on a 'pay-as-you-go' basis – which is typical in social insurance programmes worldwide. That

is, contributions made by workers and their employers are not earmarked for the workers themselves but instead are used to pay for the expenses associated with current retirees. It is, in essence, an intergenerational transfer. Technically, though, all contributions are directed to the trust funds and all payments are made from the trust funds.

Medicare Part A funds are pooled into the Hospital Insurance Trust Fund from the 2.9% mandatory payroll tax paid by employers and employees (1.45% each). These funds pay for hospital services for all Medicare enrollees. Part B and D funds are pooled at the level of general federal revenues in the Supplementary Medical Trust Fund programme. For Medicare Advantage (Part C), financial resources flow from the government, which is the principal collection agency, to private insurance companies that sell insurance and pool funds. Payment to Part C plans from the government are capitated and risk-adjusted based on beneficiaries' health conditions, dual-eligible (Medicaid) status, disability eligibility status and institutional status. Pooling for Part D is similar to Part C in that general revenue funds are paid to private health plans on a capitated risk-adjusted basis.

3.3.4 *Purchasing and purchaser–provider relations*

The role of purchasing and purchaser–provider relations in Medicare depend on whether a Medicare beneficiary belongs to the traditional (FFS) Medicare system or is in a Medicare Advantage plan, most of which rely on managed care. Since the passage of the ACA, the CMS has also begun contracting with teams of providers to coordinate care in the hope of improving quality and reducing costs. These groups are called Accountable Care Organizations (ACOs) and are discussed further in Box 3.3.

TRADITIONAL MEDICARE

An unusual aspect of the physician payment system regards the 'assignment' of services. Physicians can choose to accept assignment for all services, or alternatively to do so on a selective basis. For assigned services, Medicare pays its share (generally, 80% of the Medicare fee after the patient meets a small annual deductible) directly to the physician, which removes the risk of default on most of the bill. In return, the physician agrees to accept the

BOX 3.3 Accountable Care Organizations

While some integrated delivery systems exist in the United States, most public and private purchasers pay physicians, hospitals and other providers separately for services to a patient. Often the care delivered is not coordinated across providers, creating inefficiencies, increasing costs and reducing quality. Accountable Care Organizations (ACOs) are healthcare providers that may be independent organizations but work in concert with the goal to improve patients' health and reduce costs. These organizations may, for example, share a patient's medical records to ensure that care is coordinated, work to avoid duplication of services and tests, and try to ensure that prescription drug interactions are not harmful. Care is coordinated across a range of settings, from doctors' offices to hospitals and long-term residential care facilities. Individual providers and organizations that participate are rewarded by public and private purchasers with part of the savings that may accrue through improvements in coordination and quality of care. ACOs in the United States have seen significant growth, from fewer than 100 organizations in 2011 to over 1000 in 2018, while the percentage of the population enrolled under an ACO contract has grown from a few million to over 32 million, covering 10% of the population (Muhlestein, Saunders & McClellan, 2017; Muhlestein et al., 2018).

Under the Medicare shared savings programme for ACOs established by the ACA, Medicare is able to contract with ACOs. Patients who receive most of their care from providers in an ACO are assigned to that ACO to allow CMS to establish the patient population that providers will be 'accountable' for. Utilization, cost and quality performance of each ACO are be measured and reported publicly so that patients may monitor them and providers will be held to minimum quality standards in order to continue participation. Research continues on the impact of ACOs and quality and expenditures. While it is too early to say much about quality impacts, most studies have found only small savings (Jha, 2017; McWilliams et al., 2016).

Medicare fee schedule amount as payment in full for the service. For non-assigned services, Medicare pays its share directly to the patient, and as a result the physician needs to collect their entire bill from the patient. The advantage to the physician is that they are allowed to bill the patient up to 9.25% (15% of 95% of the Medicare fee schedule) more than the amount for the service as specified by the Medicare fee schedule.

Medicare has made it advantageous to physicians to become 'participating providers', in which they agree to accept all services on assignment. Incentives to do so include 5% more in reimbursement from Medicare, being listed in a national directory of participating physicians and faster claims payments.

In response to these incentives, over time, assignment rates have risen from 50% from the mid-1960s to the 1980s to almost 100%, mainly because almost all physicians have chosen to become participating physicians (MedPAC, 2011, 2016).

MEDICARE ADVANTAGE

Under Medicare Advantage (Part C) and Part D, the Medicare programme contracts with insurers and managed care companies to provide benefits to programme beneficiaries. For Part C, the CMS contracts with health plans to provide managed healthcare coverage for all Part A and Part B services, as well as other services not generally covered by traditional Medicare. Rates are not negotiated between the government and Medicare Advantage plans. Rather, the plans provide bids for counties that they wish to serve. The federal government establishes a 'benchmark' that is a dollar amount. It is based on a number of factors including the cost of providing services under traditional Medicare in a specific county. For bids over the benchmark[6], enrollees pay the difference in premiums. If the bid is lower than the benchmark, this amount is split between the plan and Medicare. The plan can either provide rebates to enrollees or, more commonly, enhance benefits. Part C plans are required by the CMS to provide additional services in an amount equal to any excess remaining in their plans for the contract year and to return any remaining funds to the Medicare Trust Fund.

3.4 Medicaid

Unlike Medicare, which is available to nearly all individuals aged 65 and older, Medicaid is a means-tested programme. It is designed to provide health insurance for those with the lowest income levels and fewest assets, the disabled, and to poor seniors with Medicare coverage, as well as the disabled and seniors who have exhausted their financial resources, often as a result of very high long-term care expenses. Medicaid is a key resource for some of the poorest and sickest Americans.

6 For a discussion of how the benchmark is set and policy issues surrounding it, see Health Affairs (2011).

Medicaid programmes are state-based but they are funded jointly by the states and the federal government. In return for federal dollars, states are required to meet certain federal government standards. Participation by the states is voluntary, though historically all the states have chosen to participate. Services are largely purchased from the private sector. This section of the chapter also includes information about CHIP, a coverage programme for children in families whose incomes exceed Medicaid eligibility limits but who do not have private coverage.

3.4.1 *Coverage*[7]

BREADTH OF COVERAGE

Medicaid covers several distinct population groups. The breadth of coverage varies across states according to these population groups.

The main groups covered by Medicaid are:

- low-income children
- low-income pregnant women
- low-income disabled persons
- low-income senior citizens
- low-income parents of dependent children.

For adults, in some states that have not chosen to expand eligibility under the ACA (described below), not only are there income restrictions but also asset limitations that can preclude eligibility. Even more significantly, in those states Medicaid does not generally provide coverage to low-income adults who do not care for dependent children.

Even before the ACA, Medicaid eligibility requirements had been liberalized over the years. Originally, to be eligible for Medicaid, it was necessary to also be receiving cash assistance payments (often connoted as 'welfare'). This is no longer true as states have expanded eligibility to other groups and those with higher incomes, taking advantage of the federal government matching funds to provide further assistance to their residents.

---

7 Unless otherwise noted, factual information in Section 3.4.1 was obtained from Kaiser Family Foundation (2013b).

Compared to Medicare, Medicaid covers roughly 15 million more Americans (a total of 74 million), including 55% of Americans with incomes below the poverty level (Kaiser Family Foundation, 2017e). As noted, the breadth of coverage varies considerably by eligibility group. Children and pregnant women have the most liberal eligibility requirements. States are required to cover pregnant women and children up to the age of 6 if their incomes are at or below 138% of the federal poverty level (FPL), and children aged 6–18 up to 100% of the FPL. (In 2018 the federal poverty level was $12 140 for a single individual and $25 100 for a family of four.) Many states employ even higher thresholds. When combined with Children's Health Insurance Program (CHIP) coverage, the typical state provides coverage to children aged 0–5 up to 216% of the FPL, children aged 6–18 to 155%, and pregnant women up to 258%. Thus, coverage of pregnant women and children is quite broad. To illustrate the critical role that Medicaid plays for pregnant women, the programme pays for *half* of all births in the United States (Kaiser Family Foundation, 2017f).

Coverage is somewhat narrower for seniors and the disabled, however, with the typical state providing coverage up to 73% of the FPL (Kaiser Family Foundation, 2017g). It should be considered, however, that most of these people have Medicare coverage as well, so Medicaid is providing them with supplementary insurance that covers Medicare's co-payments and some uncovered services, especially long-term care. Nevertheless, lower-income Medicare beneficiaries who are not eligible for Medicaid coverage usually do not have access to other forms of supplemental insurance coverage, and therefore are at financial risk associated with Medicare's co-payments as well as services not covered by the programme.

With respect to one particular disabled population of note – those with HIV or AIDS – Medicaid provided coverage for 42% of this population in 2014 (Kates & Dawson, 2017). To be eligible, one must not only be disabled through HIV/AIDS, but also have an income that is low enough to qualify. Of particular importance is the programme's coverage of antiretroviral drugs. However, despite Medicaid coverage for this vulnerable population, HIV/AIDS care constitutes only about 1.5% of the total programme expenditures (Kaiser Family Foundation, 2013).

Low-income parents of dependent children face the most stringent eligibility requirements if they are among the states that did not expand Medicaid eligibility. Most notable is Texas, where coverage is provided only to those with incomes up to 18% of the FPL (that is, an annual income

even as low as $4000 would disqualify the parent of a family of three from coverage in that state). Most states provide coverage up to 138% of the FPL since that is a requirement of the voluntary Medicaid expansions. This illustrates the large variation in breadth of coverage that currently exists between states.

Implementation of the Medicaid expansions, resulting from the ACA, dramatically increased the breadth of coverage for the poor and near-poor under the age of 65 in most states. Beginning in 2014, states that chose to expand their Medicaid coverage [8] received 100% of the costs of coverage for new enrollees up to 138% of the FPL from the federal government. The federal contribution gradually decreases to 90% of state costs after three years. For states that choose to expand Medicaid coverage, no categorical restrictions are allowed – for example, poor and near-poor adults without children are eligible. Finally, there are no restrictions on the possession of assets. One important caveat applies to the information provided above. Medicaid does not cover undocumented residents, nor are states required to cover legal residents during their first five years in the United States. Currently, the federal government will provide matching funds to make Medicaid coverage available to pregnant women and children who are legal immigrants with fewer than five years of residency. As of 2016, about half of states had done so (Kaiser Family Foundation, 2017h).

SCOPE OF COVERAGE

The scope of coverage under Medicaid is generally wide but varies by state. Federal law requires that states provide the following services (this is only a partial list of the more significant ones): inpatient and outpatient hospital, physician, nurse practitioner, laboratory and radiology, nursing home and home healthcare for those aged 21 and older, health screening for those under age 21, family planning and transportation.

Other services are optional for states. This designation means that if a state chooses to cover the service, it will receive matching funds from the federal government. Optional services include some major services such as

8 Just after the November 2018 elections 36 states and the District of Columbia had adopted Medicaid expansion, although a small handful are in the process of implementing it. Fourteen states had not done so, including four of the nine states with the highest population: Texas, Florida, Georgia and North Carolina. Medicaid expansion in Utah and Idaho, both Republican states, has proved more controversial than expected with ballot measures defying political leadership to squash such plans (Pear, 2019).

prescription drugs and dental care, but also such things as care provided by professionals besides physicians and nurse practitioners, durable medical equipment, glasses, rehabilitation, various types of institutional care, home and community-based services, personal care services and hospice care.

While technically 'optional', many of these services are covered to some extent by the states. All states, for example, provide some prescription drug coverage. Many states limit the number or type of services, as discussed below. It is estimated that for populations that states are required to cover under Medicaid, 31% of Medicaid spending is for these optional services (MACPAC, 2017b).

DEPTH OF COVERAGE

It is difficult to summarize Medicaid's depth of coverage, except to say that like most aspects of the programme, it varies considerably by state and by population group. While a few states impose nominal co-payments under federally approved waivers, they are, as yet, generally not very significant. In contrast, coverage is often not deep in three meaningful ways: (1) some states have been given waivers by the federal government to impose premiums and non-trivial cost-sharing requirements on some Medicaid beneficiaries, and in a few recent cases, require evidence of working; (2) states often put restrictions on the number of services and/or types that are covered; and (3) access to private practising physicians is often limited, meaning that enrollees may have to seek care from public facilities or clinics. Waivers allowing imposition of work requirements are the focus of active litigation in several states (NASHP, 2020).

It was noted earlier that there are a number of mandatory services covered by Medicaid, including inpatient and outpatient hospital and physician care, home health services, laboratory and x-ray services, to name a few (a full list of required services is available on Medicaid's website). States are, however, allowed to set limits to the number of such services provided, for both mandatory and optional services – a marked difference between Medicare and most private insurance policies provided through employment. These can significantly reduce the depth of coverage under the programme. In 2012, for example, many states had instituted visit co-payments, typically between $1 and $4, and a number also limit the number of prescriptions that can be filled; a typical limit is 4–6 per month depending on the state (Kaiser Family Foundation, 2012a).

Finally, because Medicaid provider payments are low compared to other insurance, access to care in physicians' offices has been problematic, a situation that has existed since the programme's inception. (Provider payment is discussed in more detail in Section 3.7.) In 2016 Medicaid physician fees, on average, were only 72% as high as Medicare's for all services, and 66% as high for primary care services (Kaiser Family Foundation, 2016). Medicare fees, in turn, tend to be lower than those paid by private insurers. Low physician payment rates put patients with Medicaid at a distinct disadvantage in obtaining care from privately practising office-based physicians – meaning they sometimes need to go to outpatient clinics or even the emergency room to obtain needed care. A 2011 national physician survey found that 31% of physicians said they would not accept any new Medicaid patients (Decker, 2012). One development with the potential to provide more mainstream access to physician office care is the movement towards the use of managed care in the Medicaid programme. About 75% of Medicaid beneficiaries are in managed care plans (CMS, 2016a). While the exact nature of these arrangements varies both between and within states, they may include capitation (rather than FFS) for providers and/or primary care case management. An important development is the use of managed care not only for pregnant women and children, but also for those with chronic diseases and those who are jointly covered by Medicare and Medicaid. States often prefer managed care as a means of both enhancing quality and controlling costs. It is critical, however, that capitation rates paid to managed care organizations be sufficient to provide high-quality care with access to physician offices (Kaiser Family Foundation, 2010).

3.4.2 *Revenue collection*

Medicaid is financed jointly between the federal and state governments. In general, both finance their shares from general revenues – mainly taxes. Unlike Parts A and B of Medicare, there is no trust fund dedicated to the programme's financing.

In 2016 total Medicaid expenditures were $565 billion – 85% of the $672 billion spent on Medicare and 17% of total health expenditures in the United States. Medicaid constitutes almost 10% of the federal government budget and 16% of state spending. The only state budget component with a larger share is elementary and secondary education, which constitutes roughly 24% of total state spending (CMS, 2018b; MACPAC, 2017c).

About 60% of total Medicaid spending is devoted to acute care, and 40% to long-term care (MACPAC, 2017a). Of note is the fact that while only about one-quarter of enrollees are senior citizens or the disabled, they account for over 60% of programme spending. In fact, average spending for a disabled enrollee ($16 859 in 2014) or a senior ($13 063) exceeded spending for children ($2577) and non-elderly adults ($3278) by about five-fold (Kaiser Family Foundation, 2014).

3.4.3 *Pooling of funds and risk in Medicaid*

Some of the more general issues surrounding the pooling of funds in the US healthcare system were discussed in Section 3.2.2. Currently, the main pooling activity that occurs in Medicaid is through the Federal Medical Assistance Percentage (FMAP) formula, which allots a greater proportion of federal government dollars to states with lower per capita incomes.

The formula by which states' respective shares of federal Medicaid monies is divided up is called the FMAP. The following formulas are used:

- Federal share: 1–0.45 x (state per capita income/US per capita income).
- State share: 0.45 x (state per capita income/US per capita income).

Thus, states where per capita income is at the national average will receive 55%. By law, no state pays more than 50%, with the poorest state receiving about 76%. On average, the federal government share is 57%. It is important to note that this formula does not apply to states that have taken advantage of the ACA's Medicaid expansion. After a three-year transition period, the federal government pays 90% of costs for all such new Medicaid beneficiaries, regardless of state per capita income.

The above formula is applicable to most Medicaid expenditures for medical services. Some services, and administrative costs, are determined by separate laws. Administrative costs, for example, are split 50/50 between the federal and state government irrespective of the state's per capita income.

A perennial issue surrounding the FMAP formula is that it does not respond to the counter-cyclical nature of Medicaid. When there is an economic downturn, state revenues fall. This is problematic for states in several ways:

- Since the formula is in part based on national income, if all states have declining per capita income during a recession, they will not, on average, receive higher federal government contributions.
- During such an economic downturn, unemployment rises, which means Medicaid eligibility (and therefore costs) also rises.
- The formula is based on past rather than current per capita income. For example, the 2018 FMAP was based on incomes during 2013, 2014 and 2015 (Mitchell, 2018).

3.5 Private health insurance

This section focuses mainly on employer-group insurance but also covers individual insurance. It begins with a discussion of the market role and size of the private insurance sector, and then discusses market structure, market conduct and selected public policy issues.

3.5.1 *Market role and size*

As shown earlier in Table 3.5, 173 million Americans were covered by private insurance in 2017, 87% (151 million) of whom had employer-sponsored coverage, with the remainder purchasing it individually. (By comparison, total enrolment in Medicare was about 59 million and in Medicaid about 74 million.) In spite of these numbers, expenditures on private health insurance are lower than those of government-sponsored programmes. This is because, in serving a working-age population, per capita expenditures tend to be much lower than for Medicare, which serves the over-65 population and the disabled, and for Medicaid, which, while it does serve younger people, also provides nursing home care to seniors and has the disabled among its beneficiaries.

The 2012 data patterns illustrate several barriers that certain Americans previously faced in obtaining employer-sponsored private coverage. Firstly, it is necessary to be employed or be a family member of someone employed. The labour force participation rate in the United States was about 63% in 2018, although many of those not in the labour force can receive coverage from a family member. Secondly, at that time employers were not required to offer coverage and even now small employers are not required to do so. In 2017 just 53% of firms with 3–199 employees offered coverage, compared to 99% with 200 employees or more (Kaiser Family Foundation, 2017i). Thirdly, if coverage was offered, the employee had to be eligible for it. For example, part-time employees (often young adults) usually are not offered coverage, although this varies by firm size. In 2017 offer rates for part-time employees at firms with fewer than 200 employees were 12%, but they were 62% for those with 5000 or more workers (Kaiser Family Foundation, 2017i). Finally, even if eligible, the employee has to be willing to pay the employee's share of the premiums, which, as noted below, can be considerable. So-called 'take-up rates' – defined as the percentage of employees that are offered coverage by their employers who actually purchase it – average around 75–80% (Kaiser Family Foundation and Health Research and Educational Trust, 2010). To reiterate, all four of the above are necessary for a person to obtain employer-sponsored coverage.

It is the people who are better off economically who are able to meet the four conditions mentioned above. They are more likely to be employed or have a family member who is in a firm that offers coverage, have an employment arrangement (e.g. full-time work) that results in coverage, and be able to afford their share of premiums. To illustrate, less than 40% of those between 100 and 250% of the poverty level had employer coverage in 2014, compared to about three quarters of those with higher incomes.

Individuals and families without an entry into the employer insurance market, and who are not eligible for Medicare and Medicaid, often seek coverage individually. Prior to implementation of the major parts of the ACA, individual coverage had several disadvantages over employer-group coverage and therefore would normally have been purchased only if the alternative was unavailable. It was almost never subsidized; administrative costs tended to be high (25–40%); health examinations were often necessary; cost-sharing requirements were, on average, higher; fewer types of services tended to be covered (e.g. maternity care may have been excluded); and

frequently the insured person was put in an actuarial group characterized by poor or uncertain health (Whitmore et al., 2011). As noted elsewhere in this book, the ACA changed much of this: it provides significant subsidies, prohibits high administrative costs, has no health restrictions on enrolment, and requires that people of the same age be charged the same premiums regardless of health status.

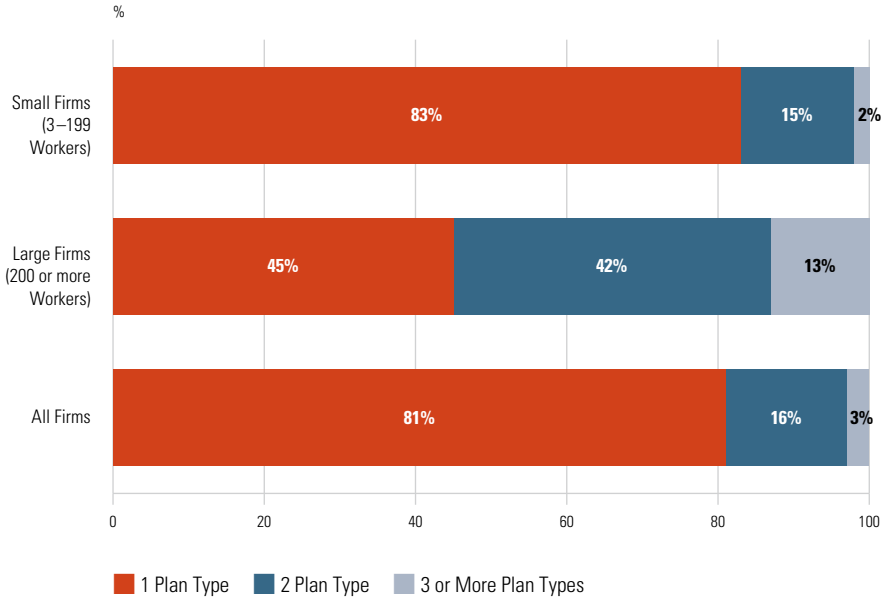
Finally, a number of factors drive the demand for coverage, including the size of the employed population and subsidies available to employers to provide coverage. (The ACA provides some subsidies to employers with fewer than 25 full-time employees when average wages are less than $50 000.) One of the main drivers is the cost of insurance. As healthcare costs rise, insurance becomes more costly to both the employer and the employee, depressing both offer and take-up rates. Moreover, coverage becomes less comprehensive through increases in patient cost-sharing requirements. Blavin et al. (2014) concluded that declines in employer-sponsored coverage are due almost entirely to the fact that per capita health spending rose more quickly than personal income.

Another driver is the changing nature of employment in the United States and, in particular, the gradual decline in manufacturing jobs and the increase in retail jobs – as well as the move from larger to smaller employers and full-time to part-time jobs. One result was fewer workers in unions; traditionally, those in unions are more likely to have health insurance (Swartz, 2006).

3.5.2 *Market structure*

Some employers, particularly larger ones, offer a number of choices of health insurance products to their employees, while small employers tend to offer far fewer choices. For federal government employees, however, there can be dozens of choices. Generally, firms hold an open enrolment period prior to the beginning of the year. In the United States the term 'open enrolment' refers to the period of time when employees can switch to a different plan irrespective of their health history or status.

FIG. 3.8 Health plan types offered by employers, among employers offering health benefits, 2017



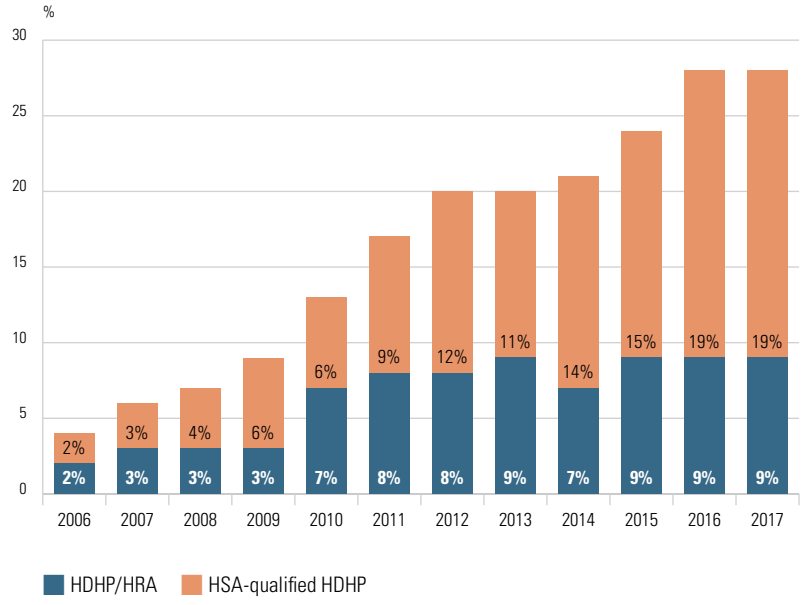
Note: Plan types offered are conventional (also known as indemnity), health management organizations (HMO), preferred provider organizations (PPO), point of service (POS), and high deductible health plans with savings option (HDHP/SO)

Source: Kaiser Family Foundation, 2017i

Among all firms that offered health benefits in 2017, 81% offered one plan type; 83% of small firms (fewer than 200 workers) offered only one plan type, compared to 45% of large firms with more than 200 workers (Fig. 3.8). Among large firms, 42% offered two plan types, and 13% offered three or more, significantly greater choice than offered to employees at small firms (Kaiser Family Foundation, 2017i). The most common plan type offered by employers is a PPO. Among firms with 200 or more employees that offered health insurance to their employees in 2017, approximately 80% offered one or more PPO choices, compared to about 32% that offered one or more HMO plans. In recent years high-deductibles plans with savings options (HSAs) have become much more prevalent, with about 60% of firms offering them. Among all covered workers in 2017, 49% were enrolled in PPOs, 16% in HMOs, 6% in a hybrid called point-of-service plans, and 29% in high-deductible plans (Kaiser Family Foundation, 2017i).

The biggest change in recent years has been the relatively rapid rise of high-deductible plans with a savings option, many of which are classified as Health Savings Accounts (HSAs) (see Fig. 3.9). Legislation encouraging their adoption was approved during the administration of President George W. Bush. In HSAs, the policy-holder agrees to purchase insurance with a high deductible (currently averaging about $2000 annually for individual coverage and twice that for family coverage). Premium contributions can be made by the individual and/or employer. These contributions are tax deductible, can accumulate year to year if unspent and therefore can be used for future medical expense. They can be withdrawn to pay for eligible medical care [9].

FIG. 3.9 Percentage of covered workers enrolled in an HDHP/HRA* or HSA-qualified HDHP, 2006–2017



Notes: Estimates from 2011 and 2016 for HSA-qualified HDHPs are statistically different from the previous year ($p < 0.05$); covered workers are enrolled in either an HDHP/HRA or an HSA-qualified HDHP

* The survey defines a high deductible HRA plan as a plan with a deductible of at least $1000 for single coverage and $2000 for family coverage. Federal law requires a deductible of at least $1350 for single coverage and $2700 for family coverage for HSA-qualified HDHPs in 2019 (or $1350 and $2700, respectively, for plans in their 2018 plan *year)*

Source: Kaiser Family Foundation, 2017i, Fig. 20

9 After the age of 65, money can be withdrawn without penalty and therefore can be used for non-medical expenses. However, in such a case, the person has to pay income tax on the amount of money withdrawn.

Advocates claim that they encourage people to purchase coverage that protects against major rather than minor expenses, the latter of which need not be insured. (All HDHPs provide first-dollar coverage for specifically defined preventive services, and recent adjustments have been made by the Internal Revenue Service to define additional services for chronic disease management that may also qualify for first-dollar coverage (Council for Affordable Health Insurance, 2009; Truong, 2019). This, in turn, makes their premiums lower and therefore more affordable. Detractors suggest that they favour the young, healthy and wealthy (who can afford the large deductible). While evidence is conflicting, most studies have found that HSAs, HDHPs and other kinds of 'consumer directed' health insurance products experience favourable selection[10] (Lo Sasso, Shah & Frogner, 2010). This is problematic in two ways. Firstly, those whose behaviour could be most affected by the cost-containment potential of HSAs will be less likely to enroll in them. And secondly, to the extent that they experience favourable selection, other insurers will obtain a less healthy mix of patients, although this behaviour may be somewhat mitigated by risk adjustment in the individual and small group markets.

As employment is the cornerstone for US health care, employers generally subsidize not only the employees' coverage but also that of family members. Often, however, the subsidy for family members is smaller. One of the earliest provisions of the ACA, which went into effect in 2011, was to require employers offering this coverage to include children up to the age of 26 (rather than the previous limit, age 23).

Employers finance health insurance in different ways and this does not change markedly with the passage of the ACA. They collect funds directly or indirectly from employees through the premiums they charge, and augment these funds with their own to pay for healthcare. This is typically done in one of two ways.

10 'Selection bias' is a major issue in the US insurance market. There are two types of bias: favourable selection and adverse selection. These are defined from the perspective of the insurer, that is, when there is favourable selection the insurer enjoys healthier enrollees, and conversely, with adverse selection their enrollees are less healthy. The terms are commonly used, however, in two very different ways. One just compares the health status or expected expenditures of enrollees vs non-enrollees. The other is somewhat more nuanced, with adverse selection implying that there are differences in health status or expected expenditures that the insurer cannot detect. This implies that they will lose (or make less) money in the presence of adverse selection because they will price their product too conservatively.

Firstly, employers may act as direct agents for their employees and seek out health insurance coverage for those whom they deem eligible. This places the risk on the insurer if health expenses are higher than anticipated. In this case employers pay for all or part of the cost of the insurance policy they purchase for their employees and pass on the remainder, in the form of premiums, to employees.

Secondly, employers may choose to self-insure. This means that they pay for the healthcare for their employees and purchase services for them directly, rather than purchasing a health insurance policy from a health insurance company. In addition, however, they contract with an insurance company to carry out administrative tasks such as claims processing, provider payment, management of provider networks and utilization management. In that role insurers are often called 'third party administrators' providing 'administrative services only'. Rather than bear the entire risk, many of them also purchase reinsurance or some other form of stop-loss coverage that limits the employer's liability if, in a particular year, employer medical expenses are higher than anticipated. In 2010 about 59% of those with employer-based insurance were in self-insured plans (Employee Benefit Research Institute, 2009.)

There are several advantages to self-insuring: it makes the firm less subject to state mandates (e.g. covering particular services) because self-insured firms are subject to the federal Employee Retirement Income Security Act (ERISA) rather than state regulations; state taxes (on premiums and state high-risk insurance pools) are typically lower; premiums do not have to be paid in advance; and with less money going to insurance companies, administrative expenses are lower. The main determinant of self-insuring is firm size, which relates to how well a firm could afford unexpected medical losses and take advantage of the laws of large numbers. While only 12% of firms with 3–199 employees are self-insured, it is true of 88% of those with 5000 or more employees. The self-insurance arrangement is an unusual feature of the US system: much of the work of US insurers does not entail taking on much risk but rather is purely administrative. Employers reimburse insurers for this administrative work even when they are self-insured.

Small businesses (up to 50 or 100 employees) have a much harder time, compared with large businesses, in providing health insurance for their employees at reasonable cost. It is harder to pool funds and reduce risks because with fewer workers the chance of incurring very high costs when a

few employees fall ill is very great. Moreover, firms of that size usually do not have the purchasing power to effectively negotiate such arrangements. For this reason, 28 states in the United States had organized small business purchasing pools by 2009, many of which are no longer in existence. This type of pooling of small groups reduces the insurer's risk and lowers the costs of insurance to small businesses, making it easier for them to provide insurance for their employees.

To some extent these pools were supplanted by the ACA, and in particular, the Consumer Operated and Oriented Plan (CO-OP) programme. The programme, funded by the distribution of $6 billion from the federal government, was earmarked to go to member-run, non-profit organizations offering qualified health plans in both the individual and small group markets (NCSL, 2016). Most of these CO-OP programmes failed in the first two years due to a host of problems, including less funding than was originally promised, adverse selection and lack of enrolment because premiums were higher than alternative options. Recent trends suggest that the employers in the small group market have responded to changes to risk-pooling under the ACA by self-insuring. 'Lower-risk' small firms may be more likely to self-insure now that the ACA has imposed community rating to pool risk in the small-group market (Trish & Herring, 2018).

As in the small group market, pooling fund and reducing risk in the individual market has been difficult in the United States. Prior to the ACA, most states allowed insurers in the individual market to underwrite each applicant separately, using information about their medical history and age. Insurers in the individual market were therefore able to select whom to cover and at what price, leaving many high-risk individuals without adequate or affordable coverage (Baicker & Dow, 2009). Such behaviour was no longer allowed when relevant ACA provisions went into effect in 2014.

This may change going forward, however, with the repeal of the ACA's individual mandate and the Trump Administration's policy to allow insurers to sell non-ACA conformant 'short-term' plans for up to 36 months, as discussed in Chapter 6.

Market share in health insurance is dominated by larger firms that generally market nationally. The top six firms (UnitedHealth Group, Anthem, Humana, HealthCare Services Group, Aetna and Centene) controlled 43% of the health insurance marketing in 2016 (Statista, 2018), but market share continues to shift. In 2017 the top six firms based on

number of enrollees were UnitedHealth Group, Anthem, Aetna, Cigna, Humana and Centene (Forbes, 2018). A study by the AMA concluded that 73% of geographic markets are highly concentrated, as well as 96% of HMO markets and 88% of PPO markets (AMA, 2018), mainly as a result of mergers and acquisitions.

Typically, premiums are shared between employers and employees. In 2018 employers paid an average of 82% of premiums for single coverage and 71% for family coverage, with employees paying the remaining amount (Kaiser Family Foundation, 2018b).

3.5.3 *Market conduct*

Nearly all health insurance products in the United States provide benefits in the form of services rather than cash. Although there are some policies that provide certain dollar benefits per day in hospital or if a disease such as cancer is contracted, they are fringe products that constitute only a tiny fraction of the market.

PREMIUM RATING SYSTEMS

There are, in general, two ways in which insurers price their products: experience rating and community rating. Under experience rating, which is the most common technique used in the large group market, insurers charge employers on the basis of past cost experiences or, when data is lacking, on predicted expenditures. In contrast, community rating entails charging the same amount to all groups. Sometimes community rating is adjusted so that, for example, everyone of a particular age is charged the same amount. As discussed in Section 2.1.2, when commercial insurers entered the health insurance marketplace after the Second World War, they were able to use experience rating to attract younger and healthier groups from Blue Cross and Blue Shield plans, which were then forced to move to experience rating.

Many states require that insurers price their products within a rate band in the small employer market, for example around plus or minus 25% of the average premium charged (Families USA, 2011). Insurers employ actuaries to determine what rates should be charged. While past health

claims are perhaps the most important determinant of rates, other factors include the characteristics of the employees, such as their age, gender, occupation, region where living and health habits. Since health insurance is a competitive business, the premiums charged by insurers are bound by competitive pressures. Other elements in the premium calculation besides expected medical expenses are a 'risk premium' to account for uncertainty on the part of the insurers, administrative expenses and profits. One of the main ways in which premiums can be controlled is to employ larger co-payments or limitations on services covered. These topics are discussed below.

Until 2014, in the individual and small group insurance markets, premiums were generally experience rated. Each individual went through medical underwriting to assess their risks. Under the ACA, the marketplaces combined, with the individual mandate to purchase insurance (the mandate being repealed effective 2019), are intended to reduce adverse selection problems in the individual and small group market by requiring plans selling in marketplaces to use community rating (older individuals can be charged up to three times more than younger but differences within age cohorts are prohibited), rather than experience rating, and by increasing risk pooling to a far greater extent than has been the case in the past in the United States. Marketplaces also reduced the need for individuals to purchase insurance through agents or brokers, whose fees can absorb 20% of the total premium during the first year of enrolment.

RISK ADJUSTMENT

Payments to insurers and health plans may be adjusted for differences in the risk characteristics of the population enrolled in coverage. Risk adjustment is designed to compensate insurers for the risks they assume and reduce their incentive to select enrollees based on risk, particularly when insurers are constrained in their ability to vary premiums by enrollee health status. Among employer-based plans, risk adjustment can be used to modify payments to insurers when firms offer multiple plan options. If, for example, a firm offers both low-cost and high-cost sharing plans, high utilizers of healthcare may opt to enrol in the low-cost sharing plan. The low-cost sharing plan would have higher premiums than the high-cost sharing plan due to differences in the actuarial values between them. However, the premiums may not

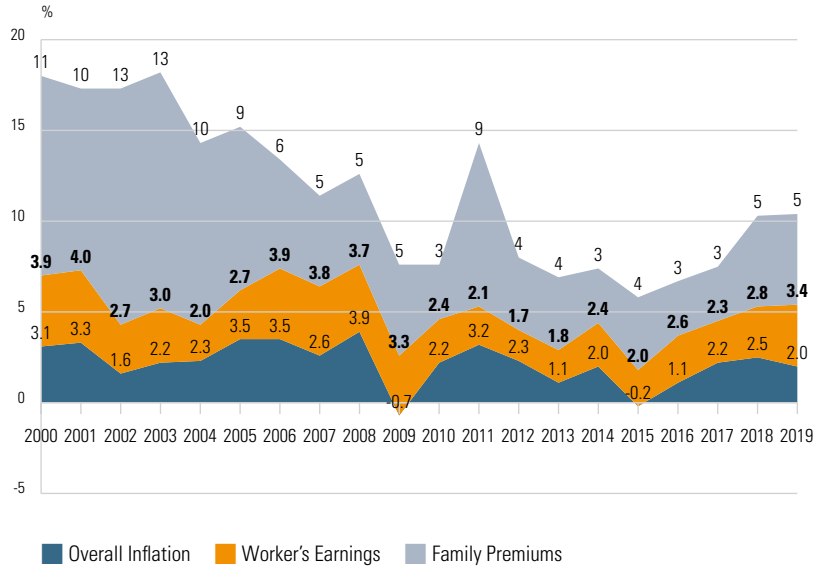
reflect the full effect of sicker employees enrolling in the low-cost sharing plan. Risk adjustment can therefore be used by a health plan to reallocate funds to adjust for selection in cases where premiums reflect differences in plan design but are unable to fully account for adverse selection (American Academy of Actuaries, 2010). However, despite evidence of adverse selection when employers offer multiple plans, formal risk adjustment is rare in the employer-sponsored market. Possible reasons for the slow rate of adoption posited include: lack of available data; concern by firms about the validity of risk-adjustment models; and the prevalence of other mechanisms attempting to address biased selection in the market (Ellis, 2001). Unlike the employer-sponsored market, risk adjustment payments are quite common among US public purchasers. The CMS uses risk adjustment in Medicare Advantage plans and Medicare Part D drug plans. Many state Medicaid programmes also make use of risk adjustment in payments to managed care organizations. Finally, the ACA uses risk adjustment in a variety of ways, including in the individual and small group markets (Kautter, Pope & Keenan, 2014).

PREMIUMS AND COST-SHARING

There are significant user charges associated with private insurance. Beginning with premiums, the average cost of employer-based single coverage was $7188 in 2019, 17% of which, or $1242, was paid by the employee. For family coverage (generally, employee, spouse and one or more children) 29%, or $6015, of the total cost of $20 576 was paid by the worker. The percentage of family coverage paid by the employee has been stable for nearly ten years for individual coverage. High-deductible plans with savings options, not surprisingly, have lower premiums than other plan types – about 10–12% less than HMOs and PPOs (Kaiser Family Foundation, 2017i, 2019c).

In recent years premiums paid by employees and their families have risen somewhat faster than earnings and overall inflation. As shown in Fig. 3.10, from 2000 to 2005 premiums rose far faster than earnings and inflation (Kaiser Family Foundation, 2017i). Since that time, with the exception of a single year (2011), premium increases have exceeded inflation by one or two percentage points, with worker earnings generally tracking overall inflation fairly closely except in the recessionary year of 2009.

FIG. 3.10 Average annual increases in premiums for family coverage compared to other indicators, 2000–2019



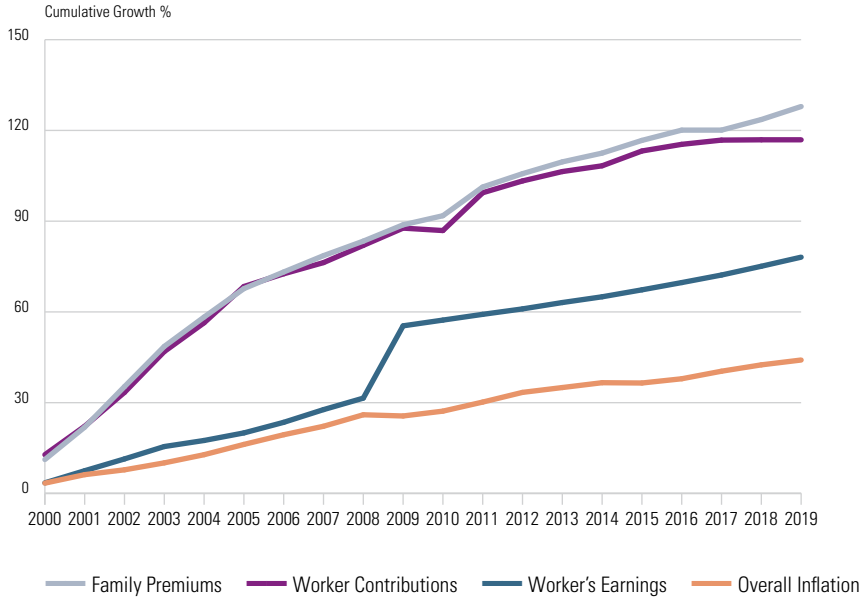
Note: Family premiums for 2004, 2006, 2011 and 2012 are statistically different from the previous year ($p<0.05$)

Source: Kaiser Family Foundation, 2019c, Fig. 2

Fig. 3.11 shows two bands of lines. The steeper set of lines indicates how family premiums and worker contributions to these premiums have changed since 2000, while the much shallower lines show changes in workers' earning and overall inflation. Over this 20-year span worker contributions to health insurance premiums have climbed by 3.5-fold while their earnings have risen only about 70% (Kaiser Family Foundation, 2017i, 2019c).

Employer plans also employ cost-sharing requirements, which also have been rising considerably over time (in part as a way to reduce premium increases). Beginning with annual deductibles and co-payments, among PPOs – the most common plan in use – 85% required a deductible in 2019, and among those, the average amount was $1655 for individual coverage. Interestingly, deductibles in firms with 3–199 employees ($2271) were over 60% higher than those in large firms ($1412) (Fig. 3.12). The percentage of employees in PPOs with a $1000 deductible rose from 34% to 47% from 2012 to 2019. Similarly, the median co-payment for a physician office visit was $25 in 2019, up from $20 10 years earlier (Kaiser Family Foundation, 2017i, 2019c).

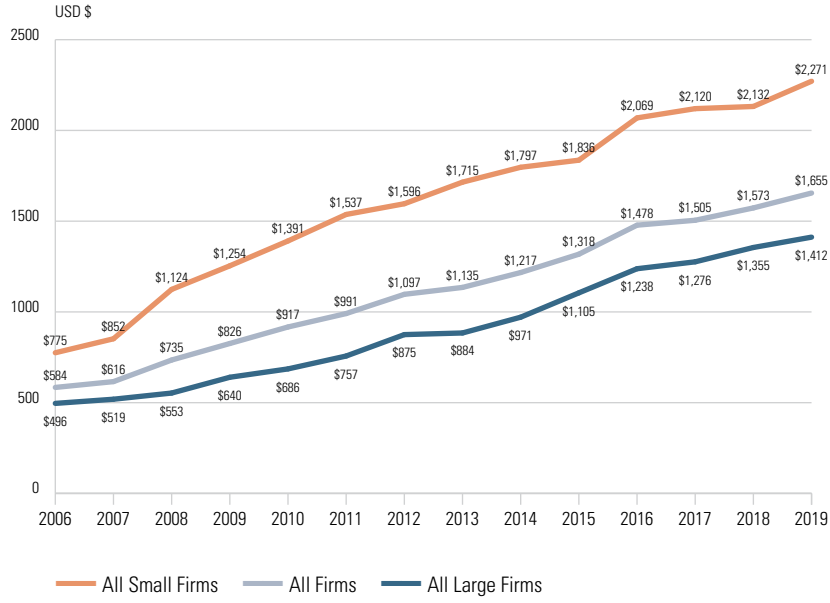
FIG. 3.11 Cumulative increases in family premiums, worker contributions to premiums, inflation and worker's earnings, 2000–2019



Sources: Kaiser Family Foundation, 2019c; Bureau of Labor Statistics, Consumer Price Index, US City Average of Annual Inflation (January to January, 2000–2019); Bureau of Labor Statistics, Seasonally Adjusted Data from the Consumer Employment Survey, Table B-3 (January to January, 2000–2019)

As is the case in many high-income countries, there are often substantial co-payments for prescription drugs. In most employer-sponsored plans, there are multiple 'tiers', each of which has its own cost-sharing requirements. Their purpose is mainly to encourage cheaper drugs, particularly generics, the use of which has grown substantially in recent years (see Section 3.7). It is difficult to summarize average cost-sharing requirements because sometimes coinsurance is used, and in other cases co-payments. Co-payments tend to be more common. In 2017 average co-payments were $11 for drugs in the first tier, $33 for the second tier, $59 for the third tier and $110 when there was a fourth tier (Kaiser Family Foundation, 2017i, 2018b, 2019c). (Tier 1 drugs are usually defined as lower cost generic drugs; Tier 2, medium cost generic and some brand-name drugs; Tier 3, higher cost brand-name drugs; and Tier 4, specialty drugs.)

FIG. 3.12 Average general annual health plan deductible for single coverage, by firm size, 2006–2019



Note: All large firms' deductibles for 2009, 2012, 2015 and 2012 are statistically different from the previous year ($p<0.05$). All firms' deductibles for 2008, 2009, 2010, 2012 and 2016 are statistically different from the previous year ($p<0.05$)

Sources: Kaiser Family Foundation, 2017i (Fig. 16), 2018b, 2019c

One way in which employer coverage tends to be more generous than Medicare's is that there is usually a limit on annual OOP expenditures. Almost all (98%) of employers with coverage are in plans with an annual out-of-pocket maximum. In 2017 the median worker had an annual maximum of about $3000. The actual situation is more complicated, however. Many plans offered by firms vary in their calculation of out-of-pocket costs and cost-sharing, thus there is wide variation in spending limits and how expenditures are counted towards an annual OOP maximum. Not surprisingly, for high-deductible plans it was much higher, with a medium of about $4000 (Kaiser Family Foundation, 2017i).

SERVICES COVERED

As with most aspects of employer-sponsored coverage, it is difficult to generalize about particular service types. Prior to implementation in 2014 of several key coverage requirements under the ACA, states were primarily responsible for determining which services must be covered, and many employers were not subject to these rules if they were self-insured. A key component of the ACA's policy strategies to increase access to care includes its requirement that all private health plans must cover at minimum a range of preventive services without imposing cost-sharing, a requirement applicable even to firms in the large group market and self-insured firms that employ third-party firms (such as insurers) to perform administrative and payment functions. As of 2014, the ACA also requires all insurers in the individual and small-group markets to provide a minimum set of 'essential health benefits', but employers who self-insure are not currently required to offer these benefits, subject only to state requirements in this area, though many choose to do so (Kaiser Family Foundation, 2020a).

National data are scarce regarding how common it is for particular services to be covered by employer-sponsored plans. In general, though, nearly all employees receive coverage for hospital and doctors' office visits and prescription drugs, with many firms also offering access to supplemental dental, vision, long-term care and critical illness insurance, though not all firms contribute to the costs of these supplemental plans (Claxton et al., 2019). It should be kept in mind that there are often limits on coverage; deductibles and co-payments are discussed elsewhere in this section. In addition, as healthcare costs have risen, employers have responded by shifting some of the costs of rising premiums to workers in the form of higher deductibles and increased cost-sharing, leading employees in employer-sponsored plans to see the greatest rate of growth for underinsurance (out-of-pocket costs and deductible compared to annual income) in recent years (Commonwealth Fund, 2019).

One thing that can limit the scope of coverage is utilization management activities (previously called utilization review). These include such things as requiring prior permission to be hospitalized or obtain certain services; second opinions before obtaining reimbursable services; and retrospective reviews after services are already received. Some of these activities, it may be argued, have the potential to reduce unnecessary services, thereby enhancing the quality of care.

ADMINISTRATIVE COSTS AND PROFITS

Across OECD countries administrative costs have remained stable over the last decade, but healthcare systems vary in their levels of administrative spending due to different cost demands under voluntary or multiple payer systems compared to compulsory or single payer systems. Voluntary systems exhibit the highest administrative spending, followed by multiple payer systems, among those with countries with compulsory schemes, which may be due in part to a wider variety of required administrative activities and reduced opportunities for economies of scale (Hagenaars et al., 2018). Thus, administrative costs in the United States tend to be higher in private insurance than in government-sponsored programmes such as Medicare and Medicaid. This is a result of several factors in addition to the need for profits. Private insurers engage in 'underwriting' activities, which involve examining past claims expenses to determine a competitive, yet still profitable, premium to charge. While this is generally not permitted in the individual market and small group markets under the ACA, it is still the norm in the large group market, which has the large majority of enrolment. They also need to market and advertise. This can involve the use of brokers or agents who have to earn commissions. Moreover, to protect themselves against unexpectedly high claims, insurers often need to factor in a risk premium.

Beyond that, there is little agreement on the magnitude of the differences. To cite a single example, observers on the left often tout Medicare's low administrative cost ratio, sometimes putting it as low as 2% of total expenses. But those on the right say this is an artefact of a high denominator – that is, when administrative costs are added to direct costs, even if administrative costs are high, Medicare beneficiaries are older and sicker and therefore direct medical costs are significantly higher and represent a larger share of total costs. They further contend that on a per enrollee basis, administrative costs are lower in private insurance (Kessler, 2017).

There is general agreement, however, that administrative costs as a percentage of total healthcare spending is higher for individual coverage and for small employers compared to large employers. This is partly a result of economies of scale – there are fewer individuals over which fixed costs can be spread (Blumberg, 2009). This is reflected in the ACA's different thresholds for minimum loss ratios, which is defined as the proportion of premiums returned to policy-holders in the form of health services. The

ACA set the medical loss ratio for insurers at 80% for individual and small group insurance and 85% for large group insurance.

There is also general agreement that US spending on administrative costs is higher than in comparable countries – not surprisingly, given the greater reliance on private insurance in the United States. The OECD estimates that the United States spends much more on administrative costs than other countries: 8%, compared to an average of 3% among 30 countries studied. It should be noted that these figures do not include administrative costs spent by providers such as hospitals (OECD, 2017). If it did, the United States would likely be more of an outlier since US hospitals and physicians' offices tend to have more personnel devoted to billing and other paperwork requirements (Jiwani et al., 2014).

3.5.4 *Public policy issues*

This subsection discusses two sets of public policy issues regarding private health insurance: its content and sale, and its tax treatment.

CONTENT AND SALE OF HEALTH INSURANCE

As discussed in Section 2.5, by and large the regulation of private insurance has traditionally been left to the states. The type and extent of regulation, however, varies greatly by state. For example, some states review health insurance premiums before giving their approval, while others simply require that rates and rate increases be filed with the state. Other regulations may include such things as: providing consumers with information about plan rules and benefits; rules governing disputes, particularly when a claim is denied; requiring that groups or individuals not be denied coverage or renewed coverage based on health status; limiting the extent of annual premium increases; and the mandating of coverage for particular benefits or providers (e.g. minimum maternity lengths of stay and/or coverage of reconstructive surgery after mastectomies; coverage of psychologist and/or chiropractor services – to name a few) (Kofman & Pollitz, 2006).

Since health insurance traditionally has not been mandatory (the 2014–2018 period being an exception), there are few federal regulations regarding

the ownership and content of private health insurance policies outside of those in the ACA. As discussed in Section 2.5, the major exception is ERISA, which governs self-insured employer-sponsored plans. These plans account for more than half of covered employees. ERISA, however, does not dictate the content of coverage.

As noted, ERISA does not require that employers offer health insurance but governs the administration of the plans that are offered. ERISA has been amended several times over the years. Some of the current requirements are that plans: provide enrollees with information about plan features and funding; establish procedures governing grievances, appeal of denied medical claims, and rights to sue; provide patients with the right to continue coverage (for a fee that is usually somewhat higher than the total premium that was paid by the employer and employee during employment) for a limited time after the loss of a job; provide annual and lifetime mental health benefits equivalent to those provided for medical and surgical benefits if they offer mental health coverage; and cover minimum maternity lengths of stay and reconstructive surgery after mastectomies.

The ACA had a major impact on private health insurance (see Box 2.1) with most provisions beginning in 2014:

- Nearly all individuals are required to obtain health insurance or pay a penalty – this 'individual mandate' was repealed effective 2019 so was in effect for only five years. To make insurance more affordable, subsidies have been – and will continue to be even after the mandate's repeal – available on a sliding scale to those with incomes up to four times the federal poverty level (approximately $100 000 in 2018 for a family of four).
- Employers with more than 50 employees are required to offer health insurance, or pay a penalty – a mandate that at the time of writing had not been repealed.
- Health insurance marketplaces were established by each state to coordinate the marketing and sale of health insurance policies to individuals and small firms. People in states not establishing their own marketplace use the federal marketplace; 39 states have chosen to do that.
- Minimum benefits must be provided by the health insurance policies. While all plans must provide these benefits, different 'tiers' can employ different patient cost-sharing requirements. The

tiers (Platinum, Gold, Silver and Bronze) indicate the expected amount of healthcare costs covered by the policies: 90%, 80%, 70%, and 60%, respectively. To illustrate the differences, Gold plan deductibles sold to individuals (as opposed to families) averaged $1320 in 2018. For Silver plans annual deductibles averaged $4033 for medical care, and for Bronze plans the average was $5861 (HealthPocket, 2017).

- Insurers operating in the individual and small-group marketplaces are required to accept all applicants and charge the same premium irrespective of health status or pre-existing conditions. (Older individuals can be charged no more than three times the premium of younger ones, and smokers can be charged 1.5 times as much as non-smokers.) The renewability of policies is guaranteed.
- Insurers are prohibited from placing a lifetime limit (e.g. $2 million) or an annual limit on coverage.
- Insurers are required to present information about their plans in a standard format, and a website will be developed to allow for the comparison of plans.
- Insurers must provide, without any cost-sharing on the part of the patient, particular preventive services.
- Medical loss ratios must be at least 80% in the individual and small group market and 85% in the large group market.
- Insurers with particularly expensive benefit packages would be subject to a surcharge (the 'Cadillac Tax', discussed below), although implementation of this controversial tax was pushed back and not scheduled to go into effect until 2022, then ultimately repealed in 2019.
- States are required to monitor health plan premium increases and require that particularly large increases be justified. However, the ACA does not provide the federal government with the authority to block large rate increases. As of May 2014, 40 state insurance regulatory commissions had the authority to disapprove insurer premiums if they were deemed inappropriately high (NCSL, 2016).

BOX 3.4 What are the key gaps in coverage?

The end result of substantial reforms due to the ACA has been a sharp decline in uninsurance rates. Looking at the total population, in 2013, 13.3% of the population was uninsured. This declined to 10.4% in 2014, 9.1% in 2015 and 8.8% in 2016 (US Census Bureau, 2016a).

Perhaps the clearest way to illustrate the gaps in the scope of coverage is by examining the characteristics of the uninsured. In 2012, before the major coverage provisions of the ACA were enacted, 19% of the adult population under the age of 65 did not have any health insurance coverage. This proportion, however, was not evenly distributed among population subgroups. Subgroups with the highest uninsurance rates included (Commonwealth Fund, 2016):

- Ages 19–34: 23%
- Hispanic or Latino: 40%
- Below federal poverty level: 30%
- Below 200% of the poverty level: 32%

In 2016 the overall uninsurance rate for adults under the age of 65 had fallen from 19% to 12%, with these characteristics:

- Ages 18–34: 15%
- Hispanic or Latino: 28%
- Below federal poverty level: 24%
- Below 200% of the poverty level: 19%

Thus, while the overall rate fell by 6 percentage points, rates for these populations historically at higher risk of uninsurance dropped much more, for some by as much as 12 percentage points.

Patterns since 2016 are less clear for the total population since data are still somewhat preliminary. The Gallup organization, a public opinion polling firm, has found a substantial uptick in the percentage of uninsured adults in the United States from 10.9 at the end of 2016, when President Trump was elected, to 13.7% at the end of 2018, just two years later (Gallup, 2019). Similarly, the U.S. Census Bureau – generally considered to be the most reliable information on the number of uninsured – found a 0.6% increase in the rate, or 1.9 million more uninsured, between 2017 and 2018 (U.S. Census Bureau, 2019). In contrast, the Commonwealth Fund (2019) does not show uninsurance rates increasing over this two-year period but does find a substantial increase in 'underinsurance', which was defined based on percentage of income spent out-of-pocket or on the size of annual deductibles faced. Because all three studies were based on randomized surveys of the US population, the reasons for the differing results is not clear.

Regardless, it is likely that uninsurance rates will rise beginning in 2019 with the repeal of the individual mandate. Moreover, even in the wake of the ACA, there are still major differences in uninsurance rates according to income. The rate is 17% for those below the poverty level, compared to 4.5% for those with income four times the poverty level or greater (US Census Bureau, 2016a).

TAXATION OF HEALTH BENEFITS

As discussed in Section 2.1, tax regulations have, historically, had a major impact on the private insurance market. Since the Second World War employer contributions to employee fringe benefits such as health insurance have not been considered as taxable income for the employee. This so-called tax expenditure was estimated to cost $248 billion in lost revenue in 2013 (CBO, 2013).

Moreover, tax exemptions on fringe benefits have encouraged employers to provide coverage – and more comprehensive coverage – in lieu of higher wages. To illustrate, suppose that an employee obtains family health insurance coverage from their employer, and that the family's taxable income is $75 000. In 2010 the average family plan cost the employer $10 000 in premiums (the employee paid another $4000) (Claxton et al., 2010). Furthermore, the marginal federal tax rate was 25% at that income level. State tax rates vary. In California, one of the higher states, it was 8.25%. Thus, the total marginal tax rate was 33.25% in California. If the employer share of premiums was not tax deductible, the family would have had to pay $3325 more in income taxes. This encourages employees and unions to seek more of their compensation in health benefits rather than income. Not coincidentally, perhaps, labour disputes in the United States now are more likely to be over cuts in health benefits rather than about wages.

For decades advocates of managed competition have called for the elimination or capping of this tax exclusion (Enthoven, 1980; Enthoven & Kronick, 1989). One provision of the ACA is that it caps the tax-exempt status for very generous health plans. Called the 'Cadillac Tax', it was originally legislated to go into effect in 2018, but had been pushed back to 2022 before being repealed in 2019. Unpopular among members of both major political parties, it levied a 40% surcharge on health plans that are worth more than $10 200 for individual coverage and $27 500 for family coverage.

3.6 Out-of-pocket payments

OOP payments are healthcare-related costs paid by consumers. They include direct payment for health services, coinsurance, co-payments and deductibles. While OOP payments have fallen as a percentage of the total, real OOP spending has actually risen considerably. This is because the size of the healthcare system has grown so fast. In 1980 per capita OOP spending was $253 of the $932 dollars spent on personal healthcare, representing a 27.1% share (Table 3.6). By 2015 US healthcare consumers spent $1060 in OOP payments of the $8479 dollars spent per capita on personal health expenditures, or 12.5%. In contrast, the consumer price index over this same period grew by only three-fold. In the midst of this general upward trend in OOP payments among OECD countries in recent decades, the United States has historically ranked second highest in per capita OOP spending, after Switzerland (OECD, 2018a).

The growth rate in OOP payments was not distributed equally across subgroups of the US population and the services they use. The largest increases in OOP spending between 1995 and 2006 were experienced by those with non-Medicaid public insurance (60%), the uninsured (46%) and individuals at or below the poverty line (35%), compared to those with private coverage (15%) (Paez, Zhao & Hwang, 2009). Despite this disparity in OOP spending growth, OOP expenditures as a percentage of total health spending have been steadily decreasing since 2006 for non-elderly adults, with uninsured adults experiencing the largest decreases. Non-elderly, uninsured adults who incurred health expenses in 2006 paid 73% of those expenses OOP, whereas by 2014 that percentage had decreased to 61%. Privately insured adults saw decline as well, though to a lesser extent (from 33% in 2006 to 28% in 2014), as did publicly insured adults (13% to 9%) (Roemer, 2017). This trend was also observed for adults aged 65 and older, and by 2014 low-income elderly adults covered by Medicare and other public insurance paid 2.7% of total expenses OOP, compared to 12.9% for those with Medicare and private insurance, and 13.3% for those with Medicare alone (Gwet, Anderson & Machlin, 2016).

TABLE 3.6 Personal healthcare expenditures, by source of funds and type of expenditure: United States, selected years, 1980–2015

SOURCE OF FUNDS	1980	1990	2000	2005	2006	2007	2008	2015
Per capita	932	2 394	4 032	5 595	5 901	6 186	6 411	8 479
All personal healthcare expenditures (US B$)	214.8	607.6	1 139.2	1 655.2	1 762.9	1 866.4	1 952.3	2 715.5
Personal healthcare implicit price deflator	28.7	58.6	83.0	100.0	103.4	106.9	110.2	112.8
Out-of-pocket payments (%)	27.1	22.4	16.9	15.0	14.5	14.5	14.2	12.5
Hospital care expenditure (US B$)	101.0	251.6	416.9	607.5	649.4	687.6	718.4	1 033.4
Out-of-pocket payments (%)	5.4	4.5	3.3	3.3	3.2	3.2	3.2	3.0
Physician and clinical services expenditures (US B$)	47.1	157.5	288.6	422.4	446.5	472.6	496.2	631.0
Out-of-pocket payments (%)	30.4	19.2	11.1	10.4	10.4	10.4	10.1	9.0
Nursing home expenditures (US B$)	18.5	52.6	95.3	120.7	125.1	132.4	138.4	158.1
Out-of-pocket payments (%)	35.7	36.1	30.1	26.2	26.0	26.8	26.7	26.2
Home health expenditures (US B$)	2.4	12.6	30.5	48.1	53.0	$59.3	64.7	88.8
Out-of-pocket payments (%)	15.2	17.9	17.9	11.4	10.9	10.2	10.1	9.0
Prescription drug expenditures (US B$)	12.0	40.3	120.6	199.7	217.0	226.8	234.1	324.5
Out-of-pocket payments (%)	70.3	55.5	27.7	24.4	21.6	21.6	20.7	14.0
Dental services expenditures (US B$)	13.3	31.5	62.0	86.3	90.7	96.4	101.2	118.9
Out-of-pocket payments (%)	66.4	48.5	44.6	44.3	44.3	44.3	44.1	40.3

Sources: CMS Office of the Actuary, National Health Statistics Group; National Health Expenditure Accounts, National health expenditures, 2016. Available at: http://www.cms.hhs.gov/NationalHealthExpendData/

Americans aged 65 years and older had the highest per capita OOP payments in 2012 ($2938) compared to any other age group, with the greatest level of out-of-pocket spending concentrated among those aged 85 years and older ($5549). Also, women spent more OOP ($1154) relative to men ($875) (CMS, 2012a). Non-Hispanic Whites spent more on OOP ($368) than other race/ethnicity groups. Among those under the age of 65, the uninsured's expenditures on OOP were higher ($536) than those with private ($362), Medicaid ($97) or other public insurance ($367) (Paez, Zhao & Hwang, 2009).

With respect to health status, OOP payments increased with the number of chronic diseases for all types of healthcare. The biggest absolute differences in the amount of OOP spending by number of chronic conditions occurred for prescription drugs. Individuals aged 65 and older with three or more chronic diseases paid $1292 on average per year compared with $173 for people of the same age without any chronic conditions. For younger adults, this difference was more than 20-fold ($951 vs $45). Comparatively, persons over the age of 65 without any chronic conditions paid $6 per capita on hospital inpatient services and $18 on outpatient and emergency department services, whereas those with three or more chronic conditions paid $56 and $49 respectively (Paez, Zhao & Hwang, 2009). In 2013 median OOP spending for Medicare beneficiaries as a percentage of median income was highest for those in poor health (21%), while those in excellent or very good health earned more and spent less on OOP payments (AARP, 2018). With respect to chronic diseases, Medicare recipients with congestive heart failure spent the most on OOP payments in 2013 ($5550), followed by those with cancer ($4586), stroke ($4338) and osteoporosis ($3832) (AARP, 2018). In part as a result of rising OOP payments among some of the most vulnerable in the United States, more than half (58.5%) of all families filing bankruptcy from 2013–2016 cited medical debt as a contributor (Himmelstein et al., 2019).

3.7 Payment mechanisms

In the United States the way in which health services are paid depends on the service provided, the type of health worker providing it and the funder, as well as where the service is provided (e.g. hospital or ambulatory care centre, California or New York). Given this complexity, the payment mechanisms for each type of health service (e.g. inpatient hospital care, prescription drugs) are discussed according to the payer involved (e.g. Medicare, insurers and health plans). Table 3.7 summarizes the primary mechanisms by which funders pay for health services.

TABLE 3.7 Payment mechanisms for health services

PAYERS	MEDICARE	MEDICAID/SCHIP	INSURERS AND HEALTH PLANS	INSURED INDIVIDUALS	UNINSURED INDIVIDUALS
SERVICES					
Inpatient hospital care	DRG	DRG, Per Diem, CR	FFS, Per Diem	Co-pay, Coinsurance	Direct
Physicians and other health professionals	FFS*	FFS*, Capitation	FFS, Capitation, Salary	Co-pay, Coinsurance	Direct
Prescription drugs	Subsidies for premiums	DAWP	Formularies	Co-pay, Coinsurance	Direct
Long-term care and home health	PPS for limited duration	PPS, CR	Per Diem for limited duration	Direct	Direct

Notes: APC – ambulatory payment classification, CR – cost reimbursement, DAWP – discounted average wholesale price, DRG – diagnosis-related group, FFS – fee for service, PPS – prospective payment system

** Physicians and other health professionals are unable to negotiate FFS payment rates for Medicare or Medicaid/SCHIP services, as they are determined at the federal or state level, respectively*

Source: Authors

MEDICARE

The main complaint about Medicare from providers concerns the level of reimbursement. Hospitals and physicians often state that provider payments do not cover their costs. The American Hospital Association (AHA, 2017) calculates that Medicare pays only 90% of the costs associated with treating programme beneficiaries, leading to a shortfall of $48.8 billion in 2016. Moreover, this 13% shortfall has reportedly risen substantially over time, from only about $1 billion in 2000. These figures are similar, although somewhat higher, than the 9.6% 'negative margin' or loss to hospitals reported by the Medicare Payment Advisory Commission (MedPAC, 2018a), which provides Congress with analysis and advice on Medicare payment policy.

Physicians and other health professionals. The adequacy of Medicare payment to physicians has received a great deal of attention from policy-makers. While some publicity has been given to anecdotal evidence that many physicians are no longer seeing Medicare patients, this does not seem to be the case in the aggregate. Nevertheless, there are some access problems, particularly for primary care providers. Moreover, as discussed

below, Congress has been keeping physician payments considerably higher than dictated by a formula. If it chooses not to do so in the future, and instead relies on the formula, access problems could accelerate rapidly.

Medicare Part B pays for physician services using an RBRVS fee schedule. The RBRVS divides the cost of providing services into three categories: physician work, office expenses and professional insurance. The payment is determined by multiplying the costs by a conversion factor set by the CMS (Kaiser Family Foundation, 2012b). Box 3.5 contains further details on the RBRVS. While most Medicare payments for non-physician services are adjusted each year by the CMS for inflation, payments for fee-for-service (FFS) physicians are calculated based on total performance on a value-based scale implemented under the Merit-Based Incentive Payment System (MIPS) (CMS, 2018c; Rice, 2015). (See Box 3.5 for more details.)

Medicare Advantage (Part C) plans can be local HMOs and PPOs, private FFS plans or HMOs for specific high needs patients (e.g. those in long-term care with chronic conditions). There are two alternative ways in which physicians are paid: two-tier and three-tier systems. In two-tier systems, Medicare pays the managed care organization, which in turn pays the physician directly. In the more common three-tier arrangement, there is an intermediary: the medical group where the physician works. In these situations Medicare pays the managed care company, which in turn pays the medical group. The group pays the physician in any manner that is mutually agreed upon.

Thus, there is a fairly distant relationship between the purchaser (Medicare) and the provider. The main issue affecting physicians is the adequacy of payment rates from Medicare to the managed care organization. In recent years these payments have been, by most accounts, very generous. When HMOs first began contracting with Medicare, payment systems were designed to save Medicare 5% compared to what it would have paid in the FFS system. This did not occur, in part because of favourable selection (healthier patients) enrolling in managed care organizations, but also because over time payment formulas have become more generous. Researchers have found that the payments actually exceed what Medicare would have paid in the FFS section by an average of about 12% (Biles et al., 2006). While this did allow Medicare Advantage plans to offer additional benefits, it has been costly to the Medicare programme.

The ACA reduced payments to Medicare Advantage plans to put payments on a par with those in the traditional Medicare programme. These cuts were phased in over several years and were expected to result in a decline in the Medicare Advantage enrolment – which constituted 23% of Medicare beneficiaries in 2009. The expected fall in enrolment was mainly because Medicare Advantage plans would no longer be able to offer as many extra benefits compared to what is provided in the traditional programme, but also because plans were expected to have to charge higher premiums and co-payments. However, enrolment in Medicare Advantage plans has increased since 2009, and now covers 33% of Medicare enrolees (Kaiser Family Foundation, 2017c). The reasons for this unexpected outcome are not fully understood. Possible reasons include a long phase-in period for the payment reductions, the fact that they were paired with bonus payments for achieving high-quality scores, the improved reputation of and experience with managed care plans over time; and a better understanding of consumer desires on the part of the private insurance companies offering Medicare Advantage plans (Frakt, 2017; Skopec et al., 2019).

Similar to inpatient care, Medicare uses a prospective payment system to reimburse for ambulatory care services (e.g. clinic visits, outpatient procedures) called the Medicare Outpatient Prospective Payment System (see Box 3.5 for more details). While traditional Medicare does not cover dental services, some Medicare Part C Advantage plans do cover dental services as part of the enhanced benefits described above, and pay dentists on a FFS basis.

Inpatient hospital care. Since 1983 Medicare Part A has used a prospective payment system to reimburse for hospital services (Shi & Singh, 2008, p. 227). The amount paid per patient per hospital stay is a bundled payment called a DRG payment. More information on DRGs and other Medicare payment mechanisms is presented in Box 3.5. Although additional payments can be made to hospitals for extremely lengthy or expensive inpatient stays, hospitals are generally 'at risk' in the sense that with a prospective bundled payment they make money on some Medicare patients and lose money on others.

BOX 3.5 Medicare Part A and Part B payment mechanisms

Relative value-based scale

Medicare Part B pays for physician services using a Resource-Based Relative Value Scale (RBRVS) fee schedule. If providers agree to take the Medicare payment as full payment they are not allowed to charge anything additional to the patient above the deductible and co-payment. RBRVS-based payments from the CMS for each service are a prospective function of physician work, office expenses and liability, and are adjusted for geographical differences in resource costs. Payments are calculated by multiplying the physician's resource costs by a conversion factor determined by the CMS and are adjusted for geographical differences in resource costs (AMA, 2012). As a FFS model, the more productive a physician is under RBRVS, the more they will be paid.

Performance-based payment mechanisms

The Medicare Access and CHIP Reauthorization Act (MACRA), passed by Congress in 2015, created the Quality Payment Program to incorporate measures of performance into compensation for fee-for-service (FFS) Medicare providers. MACRA detailed a Merit-Based Incentive Payment System (MIPS) that the CMS would use to evaluate performance and incorporate value into its FFS compensation, through measurement of four broader categories of performance: quality, resource use, clinical practice improvements, and 'meaningful use' of electronic health record technology (CMS, 2018c; Rice, 2015). MIPS replaced a system of payment for physicians that relied upon a sustainable growth rate (SGR) formula limiting growth in physician payments to one percentage point per year above the growth rate of per capita GDP. However, Congress voted annually to avoid reductions in physician fees, and so the SGR formula did not contain costs and it also did not provide quality incentives. Definitions of quality, resource use, improvements to practice and meaningful use of electronic health technology have all been developed with input from key stakeholders since MACRA was signed into law, and the CMS continues to develop value-based measures of performance such as care coordination, patient experience and appropriate use of services (CMS, 2018c). Full implementation is intended to occur by 2022, and Medicare payments could see up to 18% variation across FFS providers due to differences in performance across the four domains (Rice, 2015).

Diagnosis-related groups

Since 1983 Medicare Part A has used a prospective payment system to reimburse for hospital services (Shi & Singh, 2008, p. 227). The amount paid per patient per hospital stay is a bundled payment called a diagnosis-related group (DRG) payment. The roughly 750 DRGs classify all human diseases. The classification accounts for up to eight diagnoses in addition to the primary diagnosis. The payment calculation for a DRG is complicated. It includes information about the affected organ system, surgical procedures performed, and the morbidity and sex of a patient. DRGs are assigned unique weights by the CMS to allow reimbursement for the same DRG to vary across hospitals due to wage differences between hospital markets, whether the hospital is in an urban or rural market, whether the hospital is a teaching hospital, and the share of low-income patients it treats (Shi & Singh, 2008, p. 227). Although additional payments can be made to hospitals for extremely lengthy or expensive inpatient stays, hospitals are generally 'at risk' in the sense that with a prospective bundled payment they make money on some Medicare patients and lose money on others.

Outpatient Prospective Payment System

The Medicare Outpatient Prospective Payment System (OPPS) is used by Medicare to pay for outpatient ambulatory care services. The OPPS characterizes ambulatory care into over 300 procedural groups, called ambulatory payment classifications (APCs), defined by similarities in the medical procedures and resources required to provide the outpatient service. Medicare assigns bundled payment rates for the APCs based on the median cost of services in the procedure group and geographical variation in wages (Shi & Singh, 2008, p. 228).

Accountable Care Organizations

Accountable Care Organizations (ACOs) are voluntary organizations of healthcare providers, such as doctors, hospitals and other health professionals, that agree to coordinate care for patients in order to improve the quality and efficacy of services and reduce the costs of care. ACOs tie coordination of patient care and enhanced patient outcomes to financial outcomes, offering an incentive for providers to increase or maintain patient care standards while reducing the financial burden of this care to the payer. See Box 3.3 for more detail.

Reimbursements for inpatient psychiatric services by Medicare are per diem (rather than a bundled amount per case, as for inpatient general acute care) and based upon modified DRGs. Stop-loss measures are included in this Medicare reimbursement programme to protect psychiatric hospitals from excessive losses (Shi & Singh, 2008, p. 227).

Prescription drugs. Medicare subsidizes premiums for voluntarily purchased Medicare Part C Advantage plans with a prescription drug benefit and stand-alone Medicare Part D prescription drug plans. These private plans then reimburse pharmacies based on negotiated prices for specific drugs (i.e. formularies) (Boards of Trustees, 2011).

In Part D, drug plans submit bids to the CMS each year based on their expected benefit payments and administrative costs after deducting federal reinsurance subsidies and enrollee premiums. Plans base bids on a Medicare enrollee of average health. The CMS then risk-adjusts payments based on the actual health status of plan enrollees, including diagnoses, age, sex, disabled status, low-income status and long-term institutionalization status. The CMS pays plans a direct subsidy prospectively for each enrollee monthly and reconciles the payments and actual plan costs annually (MedPAC, 2008a).

Long-term care and home health. Although Medicare does not pay for extended or custodial long-term care (this falls under Medicaid's purview, discussed below), Medicare Part A does pay for post-acute nursing home care for beneficiaries with a prior inpatient stay who need these services (Georgetown University Long-Term Care Financing Project, 2007). It pays the full amount for 20 days and then a much smaller subsidized amount up to 100 days. Medicare pays for these services using the prospective payment system, setting per discharge payment rates for different case-mix groups called Medicare severity long-term care DRGs (MedPAC, 2008b). In addition to a limited amount of nursing home care, Medicare pays for home health services related to medical treatment but not for assistance with activities of daily living (Georgetown University Long-Term Care Financing Project, 2007).

MEDICAID

Inpatient hospital care. The American Hospital Association (AHA, 2017) reports that Medicaid pays, on average, 88% of the actual cost of care – almost the same as Medicare's 87%. The cumulative loss on Medicaid patients was reported to be about $20 billion.

State Medicaid agencies vary considerably in how they pay healthcare providers for services provided to Medicaid beneficiaries. In the managed care framework, which comprises nearly two thirds of Medicaid enrollees, Medicaid pays health plans to provide a defined set of services to beneficiaries at a fixed rate. States establish managed care rates for various demographic groups using FFS claims data or encounter data (MACPAC, 2011, p. 171). Thirty-nine states, including Washington, DC, have a comprehensive Medicaid managed care programme. The percentage of Medicaid beneficiaries enrolled in managed care plans varies considerably by state, with the majority of states having rates over 50% (Kaiser Family Foundation, 2017j). Medicaid managed care organizations may vary in their provider payments strategies, as they have latitude to negotiate with providers who participate in their networks for payments to be made on a capitated or FFS basis (MACPAC, 2020).

Most state Medicaid agencies pay for hospital inpatient care using a DRG-based method. Less common Medicaid payment mechanisms for hospital services include per diem and cost reimbursement methods. In per diem reimbursement, state agencies pay each hospital a specific rate and this rate is applied to each inpatient day for all patients in that particular hospital. A handful of states use cost reimbursement. Under cost reimbursement, a state Medicaid agency receives a claim from a hospital and pays a proportion of the claim. After the hospital has submitted its annual report, any balances owed to the hospital or the Medicaid agency are reconciled (Center for Healthcare Strategies, 2010).

Physicians and other health professionals. On average Medicaid pays only 66% as much as Medicare for primary care services. Payment for specialist services is higher: for obstetric care, the average is 81%. (The average for all services is 72%.) There is, however, considerable variation by state. For primary care, the ratio varies from 38% of the Medicare reimbursement rate in Rhode Island to 126% in Alaska (Kaiser Family Foundation, 2016). Medicaid payment methods for physician services also vary by state. Many

state reimbursement methods are based on fee schedules. Fee schedules are created in such a way that physician services requiring more inputs or resources are paid at higher rates (i.e. relative value). Medicaid fees for an office visit can vary more than five-fold between states.

Both low reimbursements and administrative hassles have resulted in reduced physician participation in Medicaid, but there has been a modest overall increase in provider participation after the ACA's Medicaid expansion. In a national survey from 2015, 70% of physicians reported that they accept new Medicaid patients, which included two thirds of primary care providers (Kaiser Family Foundation, 2017k). Among primary care physicians who accepted Medicaid, 40% reported seeing an increased number of Medicaid patients as a result of expansion, though these increases have been largely concentrated in expansion states post-ACA, and have been relatively modest. In 2015 adult Medicaid patients represented 9.4% of the average physician's patient mix, up 1.6% from 2013 (pre-expansion). Physicians in expansion states experienced an average 3.4% increase in Medicaid participation, whereas there was no significant change in the proportion of Medicaid patients seen by physicians in non-expansion states (Neprash et al., 2018). Rates also varied considerably by state, ranging from 38.7% in New Jersey to 97% in Nebraska (Hing, Decker & Jamoom, 2015), with participation rates showing a strong association with variation in the reimbursement rates. For example, the Medicaid to Medicare reimbursement ratio in New Jersey (where participation is 38.7%) is 0.48, whereas in Montana (which has a 90% participation rate) providers are paid the same rate by both Medicaid and Medicare (Robertson, 2017). A national study with data from 2005 found that administrative complications, such as the average amount of time it takes a physician to receive Medicaid reimbursement, varied from 37 days to 115 days. These delays acted to offset the effect of receiving a higher rather than a lower fee for services provided (Cunningham & O'Malley, 2008). A recent national, longitudinal study (2012–2015) also offered insight bolstering this evidence: despite the ACA's payment rate increase from 2013 to 2014 for qualifying primary care physicians, Medicaid participation among providers surveyed did not change, nor did the volume of Medicaid-reimbursed services rendered (Mulcahy, Gracner & Finegold, 2018).

Medicaid pays dentists based on fee schedules. In regard to other outpatient services, most state Medicaid agencies pay for these services using cost reimbursement methods (Center for Health Care Strategies, 2010). The cost reimbursement methods Medicaid uses for outpatient

services are similar to those described above for inpatient care with the exception of laboratory services, which are paid using Medicare's clinical lab fee schedule (Center for Health Care Strategies, 2010). Some states develop their own fee schedules or adopt the fee schedule Medicare previously used for ambulatory surgical centres (rather than the prospective ambulatory payment classification (APC) system it uses now, see above). Others use Medicare's APC groups to reimburse outpatient hospital services. Less common are reimbursements based on ambulatory patient groups that are 'enhanced' in that more services are bundled in payment compared to APCs (Center for Health Care Strategies, 2010).

Prescription drugs. Unlike Medicare Part D, pharmacies are paid directly by state Medicaid agencies. States and the federal government determine reimbursement amounts based on federal guidelines. Reimbursement amounts are based on the average wholesale price discounted by a predetermined percentage plus a dispensing fee. For some multiple-source drugs, states use a ceiling price based on the federal upper limit for the drug or a state-based maximum allowable cost. The federal government also mandates that states receive rebates from manufacturers. These rebates are paid quarterly to State Medicaid agencies and are equal to the greater of 15% of the average manufacturer price (AMP) or the difference between the AMP and the lowest price available to any US purchaser. Generic drugs are rebated at 11% of the AMP (US Department of Health and Human Services, Office of the Inspector General, 2009).

Long-term care and home health. Medicaid is the primary source of funding for long-term care services, paying for more than 50% of all long-term care (Kaiser Family Foundation, 2015).To qualify for long-term care in nursing homes under Medicaid, individuals, mostly aged over 65 or disabled, must not exceed income or other financial resource thresholds set by states. Typically, the financial eligibility criteria are defined as receiving Social Security Income (SSI) and having less than $2000 ($3000 if a couple needs care) in assets, excluding a home, car and some personal belongings. (Generally, a beneficiary's primary residence and one car are not counted towards the financial eligibility criteria.) Payment mechanisms for long-term care services vary by state. Most states use prospective payment systems similar to those in Medicare. Others reimburse actual costs up to a predetermined state-wide per beneficiary spending cap. States pay directly or use third-party managed care administrators (National Care Planning Council, 2012).

INSURERS AND HEALTH PLANS

Inpatient hospital care. Private insurance plans typically negotiate with hospitals annually to set payment rates. These rates are either per diem, discounted FFS or a variation of Medicare's DRGs. For FFS payment mechanisms, private insurers will typically negotiate a discount that applies to all prices on services a hospital provides (Reinhardt, 2009). Discounted FFS payments are more commonly used by smaller private insurance companies. Some private insurers pay for inpatient care using Medicare's DRGs but may assign different payment weights by hospital and episode bundle (Reinhardt, 2006).

Physicians and other health professionals. Many insurers pay physicians based on the Medicare RBRVS fee schedule but use their own conversion factors. Differences in fee schedule payments made to physicians across private insurers are a result of differences in office size, network size and local doctor labour supply. Larger practices may be better positioned to negotiate prices with an insurer to the extent they can leverage the importance of participation in an insurer's network. Smaller practices may be more inclined to take the fee schedules as given. Most specialists, with the exception of many hospital-based specialists, are paid using standard schedules rather than negotiated fee schedules. On average, physician rates fall within 20% of Medicare rates (Center for Studying Health Systems Change, 2010).

Physicians may also be paid by insurers on a capitated basis. Here, insurance premiums are allocated to physicians and provider groups under contract with an insurer to cover services for the beneficiaries. Some large health maintenance organizations, academic institutions and corporate- or physician-owned practices pay physicians a salary (NEJM, 2004).

Private dental insurance is often a stand-alone plan in which private insurers and health plans also pay for dental services based on fee schedules. Variations in fee schedules across insurers – and across markets for a given insurer – are a function of the same economic factors driving differences in physician fee schedules described in this section. Private insurers and health plans often pay for other outpatient services, such as outpatient surgeries, using bundled payments similar to the APC system employed by Medicare and Medicaid discussed earlier (Reinhardt, 2006).

Prescription drugs. Insurers and health plans purchase pharmaceuticals often with the assistance of a pharmaceutical benefits manager (PBM), who helps purchasers sift through often complicated pricing and distribution

schemes. Plans tie their co-payments for particular drugs to formularies. Often, insurers use a four-tier pricing system where drugs are either (1) generic, (2) preferred brand, (3) other branded products, or (4) specialty, with co-payments rising, often substantially, from the generic to the preferred to the non-preferred brand to specialty tiers (Schweitzer & Comanor, 2007).

The use of so many tiers is a relatively new phenomenon; the proportion of employees in plans with three or more tiers rose from 27% in 2000 to 84% in 2017. Moreover, over this time period, while co-payments for generics increased by 25%, they rose by 80% for preferred drugs, 59% for non-preferred drugs and 44% for specialty drugs. In 2009 average co-payments in the four tiers were $11, $33, $59 and $110 respectively (Kaiser Family Foundation, 2017i).

Long-term care and home health. In 2014, 11% of adults aged 65 and older purchased additional insurance coverage for long-term care services. Long-term care insurance products are purchased in individual or group markets. Premiums vary based on whether the plans have inflation protection, and by the age and health status of the insured. Beneficiaries can collect the benefit once they demonstrate the need for substantial assistance with at least two of six activities of daily living (e.g. bathing, dressing) and a waiting period of 90 or more days has expired. Insurers then pay a set amount per day – $150 on average for policies purchased in 2015 – generally for 2–5 years (Johnson, 2016).

UNINSURED INDIVIDUALS

Uninsured individuals either pay for health services directly or, in some cases, receive them at no cost as charity or uncompensated care. Hospitals, physicians and other health professionals can negotiate prices with uninsured persons on a case-by-case basis. Some providers use means-testing when determining the final payment owed by uninsured individuals (Reinhardt, 2006). Often, however, the uninsured pay prices far in excess of what public or private insurers pay (Anderson, 2007). Compared to those with insurance, the uninsured are frequently required to pay the full cost of the healthcare service before it will be provided (Asplin et al., 2005; Kaiser Family Foundation, 2011b). For those who are unable to pay, hospitals, physicians and other healthcare professionals may provide services without compensation. Uncompensated care totalled $85 billion in 2013 (70% of

total spending on care for uninsured non-elderly individuals, and 3% of overall national health expenditures), with approximately 62% of these costs borne by federal, state and local government funds reserved for caring for the uninsured (Kaiser Family Foundation, 2017b). As discussed in Chapter 5 and Section 7.2, many uninsured persons go without needed healthcare or visit local emergency departments because they have no access to primary care.

VALUE-BASED PURCHASING AND PAY-FOR-PERFORMANCE

In addition to the payment mechanisms described above, there have been significant efforts across a range of care settings to incorporate quality of care into compensation strategies (value-based purchasing) so that providers may be compensated based on performance in achieving pre-specified goals. Pay-for-performance (P4P) (also known as Pay-for-Quality (P4Q)) 'refers to financial incentives that reward providers for the achievement of a range of payer objectives, including delivery efficiencies, submission of data and measures to payers, and improved quality and patient safety' (McNamara, 2006, p.5S). More than 40 private-sector P4P programmes existed in the United States in 2011 (Health Affairs, 2011), and by 2017 commercial insurers estimated that almost 50% of reimbursements took the form of value-based payments (NEJM Catalyst, 2018). Insurers such as Cigna and Arkansas BCBS, for example, have led recent efforts to incorporate P4P into incentives for drugs (Cigna), and discounting payments for FFS services in order to create a pool of funding to reward 'high-value' health outcome improvements (Arkansas BCBS) (NEJM Catalyst, 2018). The popularity of value-based payment schemes is growing despite mixed evidence on the success of such compensation strategies in producing better outcomes across a range of metrics (Eckhardt, Smith & Quentin, 2019; Scott, Liu & Yong, 2018).

Use of value-based purchasing has also significantly expanded among public insurance programmes over the last decade. Some states, as well as the CMS, have created or launched demonstration projects to align provider-payments with quality. Leveraging its purchasing power, Medicare has several P4P demonstration projects. These include projects in which hospital payments are tied to performance on quality measures, such as reduced hospital readmissions, adhering to clinical best practices, and increased

patient satisfaction scores, and physician FFS payments are tied to quality and efficiency measures. Providers and insurers are rewarded for improving the care management of patients with chronic conditions (CMSenters for Medicare and Medicaid Services, 2018d; NEJM Catalyst, 2018). There has also been a movement towards value-based payment reform in the Medicaid programme, where states have made use of P4P strategies through compensation structures for Patient-Centered Medical Homes (PCMHs) and Medicaid Managed Care Organizations (MMCOs), and through shared savings programmes (AMA, 2019).However, P4P rewards are seldom more than 5% of a US physician's salary (Advisory Board Company & Foundation, 2008) and very few studies have provided evidence on longer-term health or process of care outcomes – the average length of follow-up is four years post-P4P policy implementation (Mendelson et al., 2017).

The ACA provided expanded support for value-based payment models, such as P4P, that incorporate performance into compensation, which was strengthened when Congress signed MACRA into law in 2015 (see Box 3.5), but efforts to evaluate the effectiveness of P4P in improving value are ongoing. A recent systematic review of performance-based payment across countries and care settings concluded that performance of primary care providers improved in the first year of a P4P programme on dimensions of chronic disease management and individual-level process of care indicators, but that initial gains tended to reach a plateau or grow more slowly and at rates similar to pre-P4P trends in subsequent periods (Eckhardt, Smith & Quentin, 2019). Within ACOs, such initial gains in chronic care management were much more modest, and in hospitals P4P did not appear to improve process of care nor timeliness of care. Finally, data regarding health outcomes are inconclusive, and methods used to evaluate all care outcomes varied widely across studies reviewed, complicating efforts to evaluate how and when P4P could prove effective in improving health system functioning and outcomes. Current research priorities also include ongoing evaluation of whether P4P programmes are equally effective at improving quality of care across a broad spectrum of patient populations and needs, and additional evaluation of the long-term impact of P4P compensation on performance (Shakir, Armstrong & Wasfy, 2018).

4

Physical and human resources

Chapter summary

- Since the 1980s the United States has experienced an increase in ambulatory facilities and a decrease in institutional settings.
- The number of hospital beds and length of stay have fallen (and are amongst the lowest among high-income countries) but occupancy rates remain low.
- The United States uses more MRIs and CT scanners than comparable countries.
- The age of hospital physical infrastructure is increasing slightly, especially in the last few years.
- Employment of all types of healthcare personnel has increased since 2000, but the amount of increase varies, and numbers in the United States are on the low side of other high-income countries: smaller increases occurred with registered nurses (RNs), licensed practical nurses, some healthcare technologists and technicians, and support occupations; large increases occurred with physicians, and several types of therapists.

- The United States benefits from net inward migration of healthcare professionals from other countries.

- The United States suffers from internal maldistribution of the healthcare workforce by: (1) practice and setting (with a disproportionate number of specialist physicians compared to primary care physicians); (2) geographical location (with variations in physician to population ratios of more than 100% between different regions and 20% between rural and urban locations); and (3) by racial and ethnic representation in the workforce (with African Americans, Latinos and American Indians underrepresented).

- Forecasts of future physician supply vary from predicting a shortage by 2030 to finding that shortages may be more related to practice and geographical maldistributions and delivery inefficiencies. In the case of primary care physicians, better geographical distribution, increasing the use of nurse practitioners and physician assistants, and better care coordination and efficiencies could reduce significant shortages. Nursing supply continues to fall chronically short of demand, and some forecasts predict a shortage in 2030 as well.

4.1 Physical resources

4.1.1 *Capital stock and investments*

CURRENT CAPITAL STOCK

The physical facilities for providing healthcare in the United States can be placed into several categories corresponding to the types of service discussed in the next chapter. This section will touch upon several types of facilities in the following categories: primary/ambulatory care; specialized ambulatory and inpatient care; and long-term care. Primary and ambulatory care facilities include doctors' and dentists' offices and community and public health buildings. Hospitals and ambulatory surgical centres are two important types

of specialized ambulatory and inpatient care facilities. Institutional forms of long-term care facilities include nursing homes, while non-institutional forms include home healthcare agencies, hospices and end-stage renal facilities. There are several other types of facilities in each of these categories.

Healthcare facilities may be under public or private ownership, and may be licensed by state governments, certified by the CMS for the Medicare programme and/or accredited by private agencies. Hospitals and nursing homes, for example, are licensed by each state and may receive certification from the CMS and accreditation by the Joint Commission (formerly the Joint Commission on Accreditation of Healthcare Organizations), a private not-for-profit organization. Licensing and certification require that the facility meets standards both for the physical structure and for the quality and safety of services provided by the facility. New building construction may be regulated by a certificate of need (CON) law in the state. (For more details on the regulation of healthcare facilities see Section 2.5.2).

Table 4.1 presents trends in the number of selected types of healthcare facility from 1980 to 2015. Information is not available about the methods for counting the number of facilities but it can be assumed that each stand-alone facility is counted whether or not it is part of a larger organization. In the case that a merger results in the closing of one facility, the number of facilities will decrease, but if a merger does not result in the closing of a facility the number will be unchanged.

In terms of ambulatory care, the total number of establishments in the United States increased by around 6%, from about 455 000 in 1995 to over 483 500 in 2015. The number of doctors' offices, a subset of the total ambulatory care establishments, has declined since 2000 and was about 178 000 in 2015. The size of these offices varies. A plurality of physicians in 2012–2013 were in practices of 1–2 physicians (43%) (Casalino et al., 2018). Another 31% were in offices with 3–9 physicians, while 26% had 10 or more physicians. From 2010 to 2016 the percentage of primary care physicians working in a hospital or healthcare system increased by 57% (from 28% to 44%), while those in independent solo or group practices decreased (Fulton, 2017). Another subset of ambulatory care establishments – dentists' offices – experienced an increase, from about 114 000 in 1995 to nearly 126 000 in 2015. Medicare certified ambulatory surgical centres grew more than five-fold between 1990 and 2015. Rural health clinics experienced an even greater growth, having a ten-fold increase between 1980 and 2015.

TABLE 4.1 Number of selected types of healthcare facilities in the United States, 1980–2015

TYPE OF FACILITY	1980	1990	1995	2000	2005	2010	2012	2013	2014	2015
Ambulatory care (all facilities)	–	–	455 381	489 038	454 025	479 985	485 235	484 595	483 477	483 522
Doctors' offices*	–	–	195 449	203 118	189 562	191 703	185 649	183 138	180 589	178 123
Dentists' offices*	–	–	114 178	118 305	118 163	123 322	125 151	125 554	125 860	125 904
Ambulatory surgical centres (Medicare certified)*	–	1 197	2 112	3 147	4 445	5 316	5 349	5 368	5 444	5 470
Rural health clinics (Medicare certified)*	391	551	2 775	3 334	3 661	3 845	4 001	4 026	4 062	4 104
Hospitals, all	6 965	6 649	6 291	5 810	5 756	5 754	5 723	5 686	5 627	5 564
Hospitals, community	5 830	5 384	5 194	4 915	4 936	4 985	4 999	4 974	4 926	4 862
6–24 beds	259	226	278	288	370	424	462	469	486	499
25–49 beds	1 029	935	922	910	1 032	1 167	1 192	1 186	1 168	1 146
50–99 beds	1 462	1 263	1 139	1 055	1 001	970	954	959	934	916
100–199 beds	1 370	1 306	1 324	1 236	1 129	1 029	1 012	995	1 013	983
200–299 beds	715	739	718	656	619	585	570	571	536	535
300–399 beds	412	408	354	341	368	352	348	334	328	322
400–499 beds	266	222	195	182	173	185	189	183	188	177
500+ beds	317	285	264	247	244	273	272	277	273	284
Nursing homes (Medicare certified)	–	–	16 389	16 886	15 006	15 690	15 673	15 663	15 643	15 656
Home health agencies (Medicare certified)	2 924	5 730	8 437	7 099	8 090	10 914	12 253	12 459	12 268	12 149

TYPE OF FACILITY	1980	1990	1995	2000	2005	2010	2012	2013	2014	2015
Hospices (Medicare certified)	–	1 197	1 927	2 326	2 872	3 509	3 782	3 941	4 140	4 302
End-stage renal disease facilities (Medicare certified)	999	1 937	2 876	3 991	4 755	5 631	5 916	6 145	6 374	6 558

Note: * Selected subsets of ambulatory care services.
Sum of subsets does not equal total ambulatory care services

Sources: NCHS, 2014, 2015, 2016, 2017

In contrast to the growth in ambulatory care, the number of hospitals decreased significantly from 1980 to 2015. The consolidations and closings of hospitals since the 1980s that contributed to this decline are related to changes in hospital payment and the rise of managed care (Rice & Unruh, 2016). The change from retrospective to prospective payment by Medicare and other payers, reductions in payment rates and managed care practices promoted reductions in patient lengths of stay, movement of patients to outpatient settings, increased competition among hospitals, and increased hospital financial constraints. These operational changes stimulated hospital consolidation and closing. The decrease in the number of hospitals occurred across all sizes with the exception of smaller hospitals (6–49 beds), which have increased in numbers over this time period.

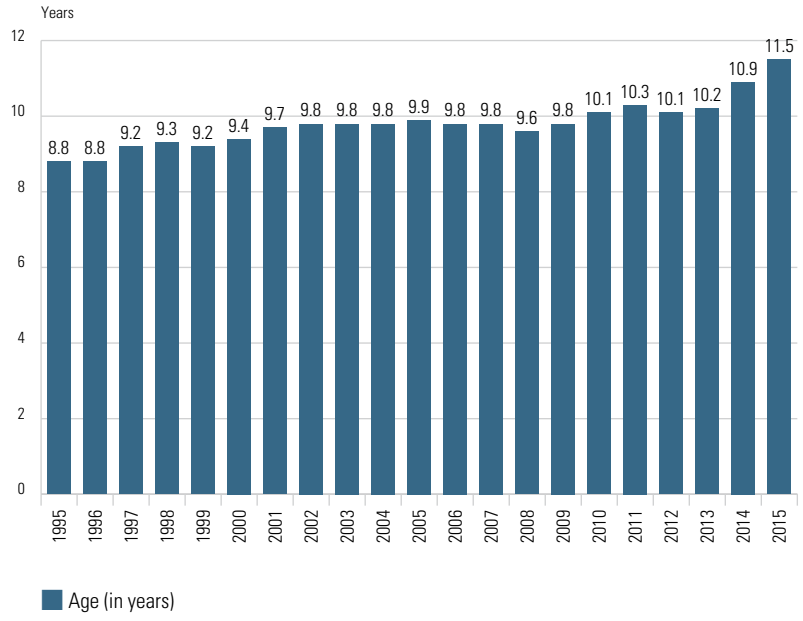
Long-term care facilities in the United States may or may not be certified by the CMS. The total number of Medicare-certified nursing homes has been decreasing since 1995 and in 2015 was close to 15 700. In contrast, the number of Medicare-certified home health agencies increased four-fold from 1980 to 2015, and stood at 12 149 in 2015. Medicare-certified hospice agencies increased similarly, most likely in response to the initiation of Medicare payment for hospice care in 1982. Since 1980 the number of end-stage renal disease facilities has increased six-fold.

Information on the age of buildings in the United States is available for hospitals only. As Fig. 4.1 shows, the average (median) age of hospital buildings increased from 8.8 years in 1995 to 11.5 years in 2015 (AHA, 2018b). This may be due to cash-strapped hospitals attempting to remain solvent by allowing their facilities to age and forgoing upgrading of equipment, facilities and information technology (Carrol, Smith & Wheeler, 2015).

INVESTMENT FUNDING

Hospitals in the United States have a high demand for capital to finance replacement of ageing facilities, and acquire new equipment and technology (Sussman & Jordahl, 2011). Capital investments are funded through internal reserves and several different external sources. Internal reserves primarily arise from positive net income (operating and non-operating cash flow), investment reserves and the divestment or monetization of assets (Blanda & Gould, 2013; Choi, 2017). Divestment of assets may involve the sale of non-core assets, such as medical office buildings, or the sale of the hospital itself to another hospital or healthcare system. This may involve a conversion from non-profit to for-profit ownership.

FIG. 4.1 Median average age of hospital plants in the United States, 1995–2015



Source: AHA, 2018b

External sources of capital funding are borrowed money (debt), equity offerings, venture capital, capitalized leases, real estate investment trusts, public grants and donations (Blanda & Gould, 2013; Choi, 2017). Debt funding can be from loans or bonds. Unlike other countries, state and federal governments in the United States provide little capital funding.

The source of capital funding depends on the hospital's legal ability to use the funds (for the most part, whether the hospital is non-profit or for-profit) and the purpose of the funding (Choi, 2017). Non-profit hospitals are able to use tax-exempt bonds whereas for-profit hospitals are not. Non-profit hospitals can also use taxable bonds if they are seeking funding for a project that does not qualify for tax-exempt bond funding (and there has been an increased use of taxable bonds by non-profit hospitals as interest rates for taxable bonds have decreased) (Choi, 2017). On the other hand, non-profit hospitals may not receive equity funding from stock offerings, whereas this is a major source of funding for for-profit hospitals.

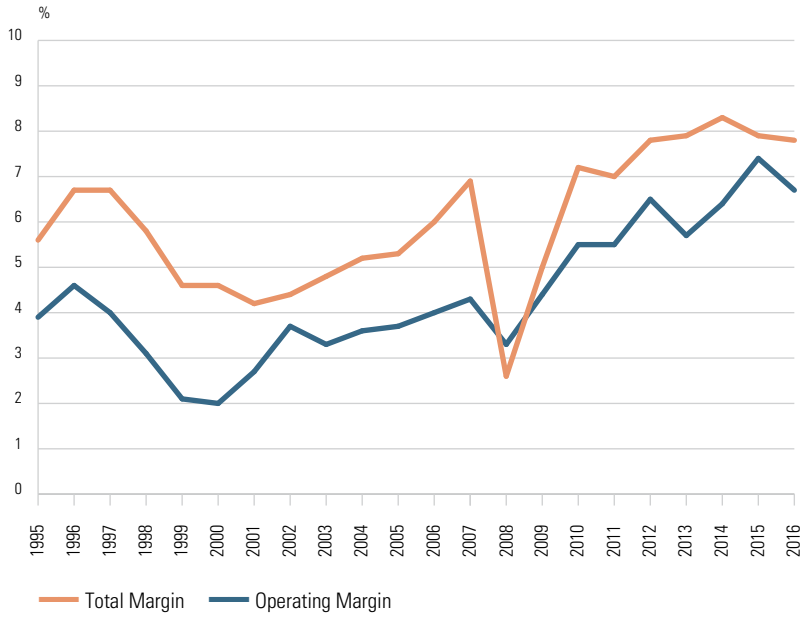
Over the past 20 years hospital access to capital has been a concern. Declines in governmental reimbursement due to the Balanced Budget Act of 1997, managed care's payment reductions, Medicare's 2001 phase-out of reimbursement for capital expenses and the 2008 financial crisis have reduced net revenue and limited important sources of internal and external capital funding (Carroll, Smith & Wheeler, 2015). Trends from 2010 to 2016 look a bit healthier: Fig. 4.2 shows that after recovering from a precipitous drop in 2008, hospital operating and total profit margins have been increasing since 2010, and were at 6% and 7% respectively in 2016. However, among for-profit healthcare companies the debt-to-asset ratio increased 50% in this same period, reaching 31% by 2015 (Ross, 2016).

4.1.2 *Institutional infrastructure*

This section examines trends in the infrastructure of three types of institutional healthcare facilities: community hospitals, psychiatric institutions and skilled nursing homes. Unless stated otherwise, data are at the national level, and trends may be different at the state and local level. Changes in the number of beds in community hospitals, psychiatric institutions and skilled (Medicare-certified) nursing homes from 1970 to 2015 are presented in Fig. 4.3.

Between 1970 and 1990 the number of community hospital beds per 1000 population declined 14%. From 1990 to 2010 the decline was even greater, at 30%. From 2010 to 2015 the number decreased only slightly and stands at 2.4 per 1000 population.

FIG. 4.2 Hospital profit margins, 1995–2016



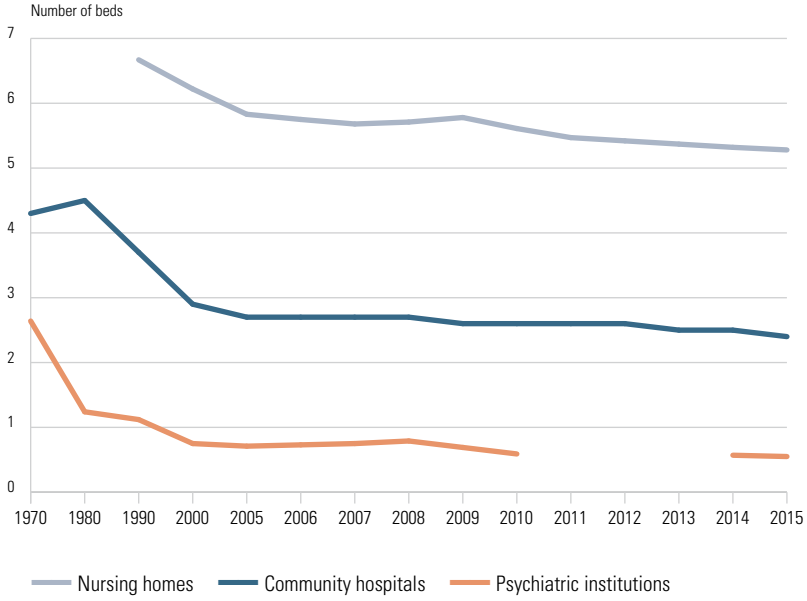
Notes: Total Hospital Margin is calculated as the difference between total net revenue and total expenses divided by total net revenue. Operating Margin is calculated as the difference between the operating revenue and total expenses divided by operating revenue

Source: AHA, 2018b, Chart 4.2

The psychiatric institutions represented in Fig. 4.3 include both psychiatric hospitals and residential treatment organizations. The number of beds in these institutions fell 58% from 1970 to 1990, and another 36% from 1990 to 2000, levelling off between 2000 and 2008. From 2008 to 2015 the number of beds decreased another 37%.

The number of skilled nursing home beds also declined (see Fig. 4.3). From 1990 to 2010 the number of skilled nursing home beds per 1000 population fell 18%. The downward trend continued from 2010 to 2015 with another 6% reduction in beds.

FIG. 4.3 Number of beds in US community hospitals, psychiatric institutions and nursing homes per 1000 population, 1970–2015



Notes: Community hospitals are defined as non-federal, short-term general and other specialized hospitals. The types of facilities included in the category of community hospitals have changed over time. Psychiatric institutions are defined as all 24-hour psychiatric hospitals and residential treatment organizations. Skilled nursing homes are those that are certified with the CMS

Sources: Data from CDC, Health, United States, 2006–2017; SAMHSA, 2018; Lutterman et al., 2017, Table 9

Trends in the number of acute-care hospital beds in the United States can be seen in comparison to six other OECD countries in Table 4.2. Prior to 2011 the United States had the lowest number of acute-care hospital beds per population of seven OECD countries. Starting in 2011, Canada and the United Kingdon had fewer hospital beds per population than the United States. Japan has historically had significantly far more hospital beds than any of the seven OECD countries.

TABLE 4.2 Acute-care hospital beds per 1000 population in seven OECD countries, 2000–2016

	2000	2005	2010	2011	2012	2013	2014	2015	2016
Canada	3.2	2.8	–	2.8	2.8	2.8	2.7	2.7	2.6
France	4.1	3.7	3.5	6.4	6.4	6.3	6.3	6.2	6.1
Germany	6.4	5.9	5.7	8.3	8.4	8.3	8.3	8.2	8.1
Japan	9.6	8.2	8.1	13.5	13.4	13.4	13.3	13.2	13.2
Netherlands	3.2	3.1	3.0	–	–	4.3	4.2	–	–
United Kingdom	3.1	3.0	2.4	2.9	2.9	2.8	2.8	2.7	2.6
United States	**2.9**	**2.7**	**–**	**3.1**	**3.0**	**2.9**	**2.9**	**2.8**	**2.8**
Mean	**4.54**	**4.13**	**3.2**	**6.2**	**6.1**	**5.8**	**5.8**	**6.0**	**5.9**
Median	**3.2**	**3.1**	**3.5**	**4.7**	**4.7**	**6.3**	**6.3**	**4.5**	**4.5**

Source: OECD, 2018a

The decrease in hospital, psychiatric and nursing home beds per population in the United States in the past decades poses the question of whether there is still adequate physical capacity to care for patients needing these types of institutional care. As far as hospitals are concerned, the indicators in Table 4.3 and Fig. 4.4 suggest that the United States still has adequate acute-care hospital capacity. Table 4.3 shows that patient length of stay has fallen from 7.3 days in 1990 to 5.5 days in 2015, and is the lowest of seven OECD countries in 2015. Combined with a slow growth in inpatient admissions (AHA, 2018a), this has meant that the number of inpatient days in US hospitals actually fell between 1990 and 2015 (AHA, 2018a). If inpatient days can be seen as a proxy for demand, and the number of beds a proxy for supply, it would appear that the demand for hospital beds has declined and the decrease in beds has been an appropriate response by US hospitals.

TABLE 4.3 Average length of stay in acute-care hospitals in seven OECD countries, 1990–2016

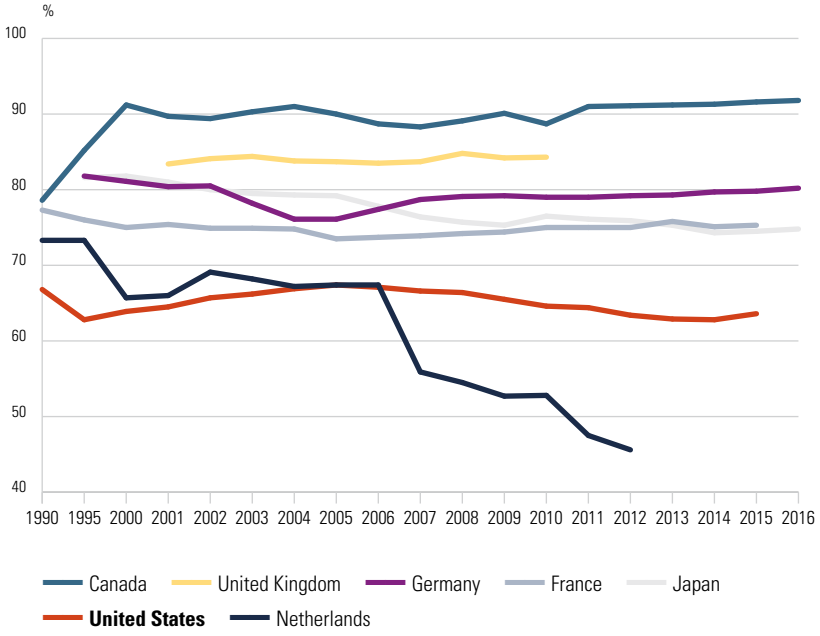
	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Canada	10.2	7.2	7.2	7.4	7.5	7.7	7.7	7.7	7.6	7.6	7.5	7.6	7.4	7.5
France	7.0	5.6	5.9	5.9	5.9	5.8	5.7	5.8	5.7	5.7	5.7	5.7	5.7	–
Germany	–	10.1	8.8	8.7	8.5	8.3	8.2	8.1	7.9	7.8	7.7	7.6	7.6	7.5
Japan	–	24.8	19.8	19.2	19.0	18.8	18.5	18.2	17.9	17.5	17.2	16.9	16.5	16.3
Nether-lands	11.2	9.0	7.2	6.6	6.2	6.0	5.6	5.6	6.5	6.4	6.7	6.7	6.2	5.0
United Kingdom	–	8.0	6.9	6.6	6.4	6.3	6.2	6.1	6.0	6.0	6.0	6.0	6.0	6.0
United States	**7.3**	**5.8**	**5.6**	**5.6**	**5.5**	**5.5**	**5.4**	**5.4**	**5.4**	**5.4**	**5.4**	**5.5**	**5.5**	**–**
Mean	**8.75**	**8.55**	**7.2**	**7.4**	**7.2**	**7.7**	**7.7**	**8.1**	**8.1**	**8.1**	**8.0**	**8.0**	**7.8**	**8.5**
Median	**8.75**	**8.0**	**7.2**	**6.6**	**6.4**	**6.3**	**6.2**	**6.1**	**6.5**	**6.4**	**6.7**	**6.7**	**6.2**	**7.5**

Source: OECD, 2018a

Fig. 4.4 shows that the occupancy rate – an indicator of capacity – stands at a low of 64% in US hospitals in 2015, even lower than it was in 1990. The lower occupancy rate indicates that the reduction in the supply of hospital beds has not been as great as the reduced demand over this period and that the physical capacity of hospitals is more than adequate at this time.

In fact, as Table 4.3 shows, compared to seven other OECD countries the United States has had the lowest patient lengths of stay since 2005, and only the Netherlands has had an occupancy rate lower than the United States (since 2007). The average patient length of stay in Japan is the highest of the seven OECD countries in our comparison. It has been very high – 25 days in 2000, down to 16.3 days in 2016. The occupancy rate has been the highest in Canada, ranging from 79% in 1990 to 92% in 2009. The United States is well below the median in all years for both indicators.

FIG. 4.4 Occupancy rates in acute-care hospitals in seven OECD countries, 1990–2016

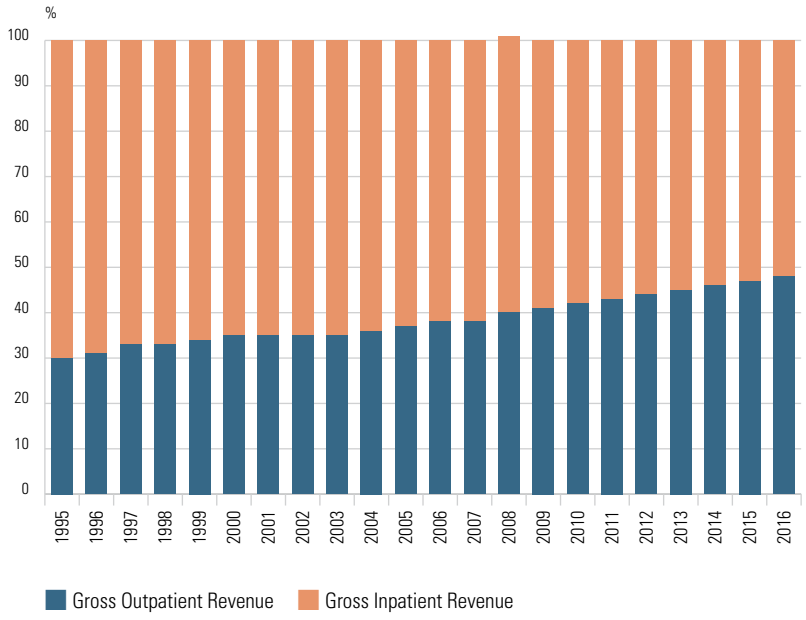


Source: OECD, 2018a

The change in acute-care hospital inpatient volume in the United States is shown in Fig. 4.5, which shows the shift from inpatient to outpatient care between 1995 and 2016. In 1995 only around 30% of US hospital revenues came from outpatient care. By 2016, 45% of revenues came from outpatient care. Since this graph only shows the proportion of inpatient and outpatient care in hospitals and does not include outpatient acute care delivered outside hospitals, it only tells part of the story regarding the extent of acute care performed in an outpatient setting.

To summarize, as indicated by the decline in inpatient days, the demand for inpatient hospital care has fallen over the past decades. More acute care is occurring on an outpatient basis both inside and outside hospitals. Supply has responded as indicated by the reduction in the number of inpatient beds. Occupancy rate has remained at relatively low levels. It appears that the physical capacity of hospitals, specifically the number of beds, has kept pace with the demand for hospital beds and is adequate at this time.

FIG. 4.5 Distribution of outpatient vs inpatient revenues in hospitals, 1995–2016



Source: AHA, 2018a, Chart 4.3

In contrast to hospitals, psychiatric institutional capacity has been affected by the decline in beds over the past decades. A key issue is that the downward trend in psychiatric beds has not been uniform across all types of facilities. The beds in public (state and county) psychiatric facilities declined from 75% of psychiatric patients in 1969 to 37% in 2014 (a drop of 500 000 beds), while those in private psychiatric hospitals, general hospitals and other private mental health organizations increased proportionally in these years (Lutterman et al., 2017). This means that psychiatric care capacity for individuals without health insurance or financial means (using the state and county beds) declined nearly 70% in these years.

This drop in psychiatric beds reflects a policy change for US psychiatric care from a long-term institutional focus to a short-term inpatient and outpatient focus. The process of deinstitutionalization began in the 1960s in response to revelations of the deplorable conditions in many state mental institutions, in which patients were kept for long periods of time (Lutterman et al., 2017). Public budget tightening also played a role in the shift. The transformation was made possible by the development of antipsychotic and other psychotropic drugs that allowed persons with long-term mental illnesses to live in the community (Lutterman et al., 2017). As long-term

institutionalized psychiatric care declined, short-term acute care increased slightly, contributing to a slow increase in private psychiatric hospitals, psychiatric beds within non-federal general hospitals and other acute-care psychiatric beds.

Now, however, many mental health professionals are concerned that there are not enough psychiatric beds (NCMDI, 2017). A 2015 survey by the National Association of State Mental Health Program Directors (NASMHPD Research Institute (NRI)) reports that 76% of states have a shortage of psychiatric beds overall: 20 states have a shortage of acute-care beds; 17 states have a shortage of short-term care beds in state facilities; 12 have a shortage in private psychiatric and general hospitals; and 23 have a shortage of long-term state facility beds. This has resulted in delays in accessing psychiatric services in all clinical settings, with the greatest delays in outpatient care in community behavioral health centres (NCMDI, 2017).

In order to increase the number of psychiatric beds, moratoriums on bed closures, public disclosure of the shortages and improved financing (mental health parity) have been suggested (Salinsky & Loftis, 2007). In addition, an increase in the capacity of community-based mental health services, which provide outpatient and home care services, would reduce the pressure on inpatient services (Druss et al., 2008; Salinsky & Loftis, 2007). Recent state efforts have focused on 'working with general hospitals to open or reopen beds, funding residential crisis beds, funding crisis response teams, and increasing other evidence-based community-based services such as Assertive Community Treatment (ACT) and Supportive Housing, which are designed to minimize institutionalization' (Lutterman et al., 2017, p. 10).

Shifting the focus to nursing homes, Fig. 4.3 showed that this industry also experienced a decrease in beds. However, similar to the changes in hospital beds, and in contrast to the shortage in psychiatric beds, the decrease in nursing home beds does not mean that the overall supply of institutional long-term care beds has decreased. Residential care facilities, such as assisted living, have become popular alternative options to skilled nursing homes for those needing some assistance with activities of daily living but not needing skilled nursing care. The number of assisted living facilities increased by 88% between 2007 and 2016 (from 11 276 to 28 900) (Sengupta et al., 2017; Wagner, n.d.).

However, care in assisted living or other types of residential care is not a perfect substitute for skilled nursing home care. Some individuals need more

personal or medical attention than can be provided in assisted living and other residential situations. It is possible that the supply of skilled nursing home beds is not keeping up with demand for these intensive services. One way to know whether the demand for skilled nursing care is outpacing the number of beds is to look at the occupancy rate. The occupancy rate in nursing homes has declined from 84.5% in 1995 to 79.7% in 2016 (NCHS, 2017). These figures indicate that the supply of nursing home beds is sufficient to meet current demand for skilled nursing care. However, the occupancy rate in assisted living facilities in 2018 was higher – at 85.3% – indicating that demand for residential care such as assisted living is high and supply of beds is tight.

4.1.3 *Medical equipment*

Medical equipment is another important part of the physical resources needed to provide healthcare. Diagnostic, surgical and medical equipment are just some of the types of devices used. The use of medical equipment has skyrocketed over the past decade as part of the overall increased use of medical technology. Equipment is being redesigned to be smaller and to be used at the point of care (Point of Care Technologies), such as in physicians' offices. This increased use and transformation of technology is linked to the changes described earlier. Reduction in hospital length of stay and the provision of more acute care on an outpatient basis require a greater use of medical equipment to quickly diagnose and treat illnesses and conditions, both within and outside the institutional setting. In turn, the development of new technology enables that transformation of care (Thimbleby, 2013).

Medical equipment is funded in part through reimbursement from the three major payers in US healthcare: Medicare, Medicaid and private insurance companies. These payers indirectly contribute to covering the costs of medical equipment in medical facilities, and directly cover the costs of medical equipment to individuals. Individuals who need to use medical equipment, such as breathing, diagnostic or transportation equipment, in their homes are reimbursed for all or part of the costs of the equipment if it is deemed necessary and covered by the payer. Individuals who do not have insurance coverage for the equipment have to pay out-of-pocket for the item. Often, medical equipment used by individuals in their homes is rented.

The costs of some equipment may not be reimbursed by the payer. Medicare, for example, pays hospitals for most technologies, and the devices or equipment that go with the technology, out of bundled payments (DRGs or APCs) for treating a particular condition (see Box 3.5). Technologies that don't fit into the bundled payment category must undergo a review process in which clinical evidence is provided showing that the benefits of the technology and devices outweigh the harm. With new devices the danger is that there may be a period of time in which there is no revenue stream to back up the purchase. The same exclusions on new technologies and devices exist with Medicaid and private insurance.

Reimbursement for the costs of medical equipment in healthcare facilities is amortized over time, while the initial purchase price must be met up front. Hospitals considering the purchase of big ticket items, for example MRI machines, may utilize the same set of financing mechanisms discussed in the section on capital investment (and equipment is part of capital investment). Common methods of investment include tax-exempt bonds, bank debt, standard leasing, tax-exempt leasing and equipment rental (Conbeer, 2007).

There are few data on the quality and quantity of specific medical devices in the United States. Two pieces of equipment that are tracked are computerized axial tomography (CT) scanners and magnetic resonance imaging (MRI) machines. Table 4.4 presents the numbers of those machines per million population from 1990 to 2011 for the United States and six other OECD countries. The United States has more of both machines per population than most of the other countries: currently around four to five times more than in the United Kingdom for both, and over twice as many as France for both. There are few data points for Japan, but it appears that it is the one country with far more CT scanners and MRI units than the United States.

The sufficiency of medical equipment in the United States has not been studied. It is possible that there is an urban–rural or regional maldistribution of medical equipment and technology, with rural areas and certain regions having less supply. Indirectly, studies have shown that there are regional differences in healthcare spending and utilization (Wennberg, Fisher and Skinner, 2002; Song et al., 2010), which could indicate regional differences in medical equipment.

TABLE 4.4 Numbers of CT scanners and MRI units per million population in seven OECD countries, 1990–2017

	1990	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017
CT SCANNERS												
Canada [a]	7.1	8.0	–	11.5	14.2	14.6	14.7	14.7	–	15.0	–	15.3
France	6.7	9.2	9.5	10.0	11.8	12.5	13.5	14.5	15.4	16.6	16.9	17.3
Germany [b]	–	9.0	12.7	29.5	32.3	33.5	34.0	33.7	35.3	35.1	35.2	–
Japan [c]	55.2	–	–	–	–	101.3	–	–	107.2	–	–	–
Netherlands	–	–	–	8.2	12.3	12.5	10.9	11.5	13.3	13.8	13.0	–
United Kingdom [d]	–	–	4.5	7.5	7.9	8.5	9.1	9.3	9.5	–	–	–
United States	**–**	**–**	**–**	**–**	**–**	**40.9**	**43.9**	**43.5**	**41.0**	**41.0**	**41.8**	**42.6**
MRI UNITS												
Canada [a]	0.7	1.4	2.5	5.7	8.3	8.5	8.9	8.9	–	9.5	–	10.0
France	0.8	2.1	2.6	4.8	7.0	7.5	8.7	9.4	10.9	12.6	13.5	14.2
Germany [b]	–	2.3	4.9	19.9	27.0	28.9	28.7	28.9	30.5	33.6	34.5	–
Japan [c]	6.1	–	–	40.1	–	46.9	–	–	51.7	–	–	–
Netherlands	–	–	–	6.6	12.2	12.9	11.8	11.5	12.9	12.5	12.8	–
United Kingdom	–	–	4.7	5.4	6.6	7.0	7.2	7.2	7.2	–	–	–
United States [e]	**–**	**12.3**	**–**	**–**	**31.5**	**–**	**34.4**	**35.5**	**38.1**	**39.0**	**36.7**	**37.6**

Notes: – data not available. [a] MRI units in Quebec are not included in 2000. [b] The data include equipment installed in acute-care hospitals and prevention and rehabilitation homes. [c] Prior to 2000, the data include only equipment in hospitals. [d] The data include devices in public sector establishments only. [e] Data are from the MRI Census and are comparable to the OECD definition. The devices in US territories are not included

Source: OECD, 2018a

Most discussion related to the supply of medical equipment focuses on the appropriate use of medical technology. The issue is whether technology is being used in an appropriate and efficient manner. The comparison above showing the United States near the top (after Japan) with regard to the number of CT scanners and MRI units per population suggests that

the United States may not make efficient use of medical technology and equipment. However, the higher use of technology may also allow for fewer hospital admissions and lower lengths of stay, which would mean that the utilization is not necessarily inefficient.

There is no consensus among US healthcare economists and policy analysts over whether the United States uses the right amount of medical technology. One group believes that the benefits of technology outweigh the costs (Cutler, 2007). An example is the ability through technology to perform more surgeries on an outpatient basis, thus reducing hospital-acquired infections and costs of care (Morrisey, 2006). Another group believes that technologies are overused or misused and that new technologies may not be more effective than existing ones (Brownlee et al., 2017). An example is the proliferation of 'me-too' drugs that have not demonstrated therapeutic gains over the older medications yet cost much more (Gastala et al., 2016; Gyawali & Prasad, 2018).

4.1.4 *Health information technology*

Health information technology (HIT), defined as the application of computers and related technologies in healthcare settings, has become an important part of healthcare. Health information systems can be used for clinical, administrative, financial, quality and safety purposes. For example, HIT can be used to manage patient clinical records, administrative data (such as use of resources), utilization, quality (such as health status, health outcomes and patient satisfaction) and safety (such as adverse events and medical errors). HIT systems collect, store, transmit and analyse data in these areas. Common users are consumers, providers, payers and the government (Blumenthal & Glaser, 2007). Some systems provide only one function, such as electronic charting, while others share interoperability across functions, for example, systems that connect across different clinical areas and that link to financial applications. Some systems share information only within the institution, whereas others are interoperable systems that connect to other institutions or users ('interconnectivity').

The systems currently in use can be classified into those that are: (1) maintained by separate organizations, with operability that is limited to those separate organizations; (2) maintained by or on behalf of individual

patients, with varying levels of operability between providers; (3) maintained at a regional system or greater level, and that involve health information exchange (Blumenthal & Glaser, 2007).

Each of these three types of HIT is discussed in this section. We also review governmental efforts to step up the pace of HIT adoption in the United States. Finally, the role of HIT in quality reporting and actual quality and efficiency improvement is discussed.

HIT WITH ORGANIZATIONAL OPERABILITY: ELECTRONIC MEDICAL (OR ELECTRONIC HEALTH) RECORDS

An important aspect of HIT on the provider side is the use of electronic health records (EHRs), also known as electronic medical records (EMRs). These are HIT systems used by providers primarily at an organizational level for maintaining and updating patient health information, entering physician orders and reporting results, observations and care (Kazley & Ozcan, 2008). The term EMR is used interchangeably with EHR, but according to the Health Information and Management Systems Society (HIMSS), EMRs are the legal medical record of a healthcare facility and are not interactive with other organizations, whereas EHRs have inter-organizational operability (Garets & Davis, 2006). Most EHRs at the time of writing are actually EMRs, that is, they are not interoperable between different providers. Healthcare policy aims at eventually developing this interoperability but progress is slow due to the difficulty in linking numerous proprietary systems, and issues regarding privacy and security. This next stage in HIT is discussed in the subsection on regional Health Information Exchanges (HIEs), below. Even though the extent of operability for EHRs in the United States is low, the literature tends to refer to both EMRs and EHRs as EHRs so this chapter also uses the term EHR to refer to either type of system.

The Institute of Medicine (IOM) defines the four core components of an EHR as: (1) clinical documentation; (2) results reporting; (3) physician order entry; and (4) clinical decision support (Jha et al., 2009). Each of these components has multiple features that may or may not be present in a given system. Basic EHRs are defined as having most of the first three components indicated above in at least one organizational unit (Jha et al.,

2009; Hing & Hsiao, 2010). Comprehensive or fully functional EHRs have all the features of all components in all units.

The adoption of these systems was slow in the United States until the 2009 enactment of the Health Information Technology for Economic and Clinical Health (HITECH) Act, which provided over $20 billion in grants and financial incentives to promote the adoption of EHRs among healthcare providers (more on HITECH below) (DesRoches et al., 2010). Prior to the Act, in 2007, only 35% of office-based physicians used at least one EHR component in their office, only 12% of physician EHRs met the criteria for having a basic system, and only 4% met the criteria for having fully functional systems (Hing & Hsiao, 2010). By 2015, a few years after the Act, 54% of office-based physicians had adopted a basic system that included information on patient history/demographics, lists of patients' problems, medications and allergies, physician clinical notes, computerized orders for prescriptions, and the ability to view laboratory and imaging results electronically) (NEHRS, 2015).

Likewise, in 2008 only 7.6–0.9% of hospitals had a basic EHR system in at least one clinical unit (Jha et al., 2009). In 2014, 41.4% of hospitals had basic systems while 39.1% had comprehensive systems (Adler-Milstein et al., 2017). Since 2014, small and rural hospitals have increased their adoption of basic EHR systems by 14% and critical access hospitals have increased their adoption by 18% (Henry et al., 2016). Basic EHR adoption in psychiatric hospitals doubled between 2008 and 2015, and increased five-fold for children's hospitals (Henry et al., 2016).

Other types of healthcare provider are also adopting EHRs. Information regarding the adoption of EHRs in nursing homes is limited but a 2012 survey reported that 18% had a fully implemented and operational EHR, while 30% had a system that was partially implemented and operational (Abramson et al., 2014). Only 11.4% of nursing homes reported no implementation plans. In 2007 about 41% of home health and hospice organizations had EHRs, and an additional 15% planned to have EHRs within the next year (Bercovitz, Sengupta & Jamison, 2010). Of the home health and hospice organizations with EHRs, 98% used components for recording patient demographics, 83% used clinical notes, and over half used clinical decision-support systems or computerized physician-order entry. EHRs are used extensively in free-standing dialysis facilities, particularly in large for-profit dialysis chains. All the five largest dialysis chains use EHRs (Kochevar et al., 2011). Even many small dialysis facilities use EHRs (around 61% in 2010).

A few large healthcare systems have achieved EHRs that are interoperable between providers within the same healthcare system. The VHA – the largest integrated healthcare system in the United States – is an example. The VHA developed an HIT system called the Veterans Health Information Systems and Technology Architecture (VistA) that was capable of interconnectivity between all providers within the VHA system (Byrne et al., 2010). The VHA achieved close to 100% adoption of several VistA components, including inpatient and outpatient EHRs, bar code medication administration and computerized physician order entry (CPOE). In 2013 VistA incorporated a personal health record component (see next subsection) so that patients have access to their records (VA, 2018). In 2018 the VHA began the process of transitioning from VistA to a commercial system, Cerner, also used by the Department of Defense (DOD), so that records could be interoperable between DOD and VA patients (VA, 2018). The new system began operating in October 2018.

Another example is Kaiser Permanente, the largest private non-profit integrated healthcare system in the United States (Chen et al., 2009). Kaiser Permanente provides group health insurance, outpatient care such as primary and specialty care, testing, imaging and pharmaceuticals, and inpatient hospital care. In 2004 Kaiser began implementing a system-wide EHR, HealthConnect, rolling it out to 431 medical offices and 36 hospitals by 2010 (Wheatley, 2013). The EHR provides clinical documentation and decision support across care settings, and real-time connectivity to testing, imaging, pharmacy and other ancillary systems (Wheatley, 2013).

HIT MANAGED BY AND FOR PATIENTS: INTERNET USE FOR HEALTH DECISIONS AND PERSONAL HEALTH RECORDS

On the consumer side, the internet has become a source of information (and misinformation) on healthcare, and providers are able to communicate with patients through email or web portals. HIT is slowly transitioning to integrate the provider and consumer sides so that patients can view and add to their medical record online (Hogan & Kissam, 2010).

The consumer use of internet, email, web portals and smart phones for health information and management has been aided by the increased use of personal computers and the internet in the home and school settings since the mid-1980s (US Census Bureau, 2009), and smart phones since the 2000s (Sarasohn-Kahn, 2010). The US Census Bureau reports that in 1984 only 8% of the US population had a computer in their home, and in 1997 only 18% had internet service in their home (US Census Bureau, 2009). By 2003, 62% of American households owned at least one computer, and 55% had internet connection. In 2010, 77% of households owned a computer and 71% had internet connection (OECD, 2020). By 2016 the US Census Bureau found that 89% of households had a computer and 81% had a broadband internet subscription (Ryan, 2018). According to 2012 data, this US utilization was higher than the median in six OECD comparison countries (77–94% for the ownership of a computer and 67–94% for internet service) (OECD, 2018b). By type of computer/internet connection, in 2016, 76% of US households had a smartphone, 58% had a tablet and 77% had a desktop or laptop computer (Ryan, 2018). Smartphone use was more common among young people, Blacks/African Americans and Hispanics, and those with low income (Ryan, 2018).

A growing number of adults who have access to computers and the internet make use of these technologies for their healthcare. Of adults who had internet access in 2013, approximately 72% used the internet to search for information about health or healthcare (Fox & Duggan, 2013). In 2014 nearly 40% of Americans had electronic access to their medical record, and over half of those used the service within one year (Office for National Coordinator of HIT, 2015).

Health information that is managed and used by the individual patient is commonly known as a personal health record (PHR). PHRs electronically store patient health information from multiple sources in a central place. Essential components of PHRs are patient access to the information, the ability to warehouse patient health history, and portability of the information across providers (Grossman, Zayas-Cabán & Kemper, 2009). PHRs can be used by both individual patients and their providers.

Several large integrated healthcare systems offer PHRs. The VHA has developed MyHealtheVet (Kahn, Aulakh & Bosworth, 2009; VA, 2019). The PHR supports appointment scheduling, medication requests and other services. Kaiser Permanente, the Cambridge Health Alliance and other providers offer PHRs through their HIT systems.

The interconnectivity and portability of PHRs are positive features, but these very features make it difficult to progress in PHR development. Getting data from a patient's various providers (each of which may use a different HIT) into a standardized and centralized data warehouse is a level of technology that is underdeveloped (Kahn, Aulakh & Bosworth, 2009). At the same time privacy issues involved in data access and transfers are major concerns.

HEALTH INFORMATION EXCHANGES: REGIONAL HITS

Health information exchanges (HIEs) are groups of healthcare providers and payers (such as physician offices, hospitals, insurance companies, employers, pharmacies, consumer groups and government agencies) that are connected through HIT systems maintained by the organizations themselves (Blumenthal & Glaser, 2007). Regional health information organizations (RHIOs) are HIEs organized on a regional (state-wide or local) basis, where electronic health information is stored and shared. The 2009 HITECH Act (mentioned earlier) provided funding for the development of HIE (Devine et al., 2016).

Despite challenges with standardization of EHR features and interoperability, HIE use has grown. In 2013–2015 some level of information was exchanged between 82% of non-federal hospitals, 38% of physician practices, and 17–23% of long-term care facilities (Devine et al., 2016). Statewide HIEs, originally funded by HITECH, have progressed more slowly, with only a small number of states having state-led HIEs.

Underfunding, privacy and proprietary issues are major barriers to the development of HIE (Rudin et al., 2014). Many HIEs fail due to lack of funding. In 2009 over 67% of RHIOs did not meet criteria for financial viability (Adler-Milstein, Desroches & Jha, 2011). Privacy issues are the same ones that plague EHRs: how to share patient information securely. Proprietary issues involve the disadvantages of sharing information with competitors. Providers state that if they share information about patients with competitors, they could lose their competitive edge with those patients (Adler-Milstein, DesRoches & Jha, 2011).

GOVERNMENT EFFORTS TO EXPAND HIT

Increasing the use of HIT in healthcare has been a policy priority in the United States since 2004. In that year a series of federal initiatives were begun that led to the 2009 enactment of the HITECH Act as part of the American Recovery and Reinvestment Act (ARRA) (DesRoches et al., 2010). Under this law, starting in 2011 physicians and hospitals received incentive payments to adopt EHRs (Brice et al., 2018). The HITECH Act also allocated funds to build HIEs (RHIOs) at state and regional levels. As of November 2015, over $21 billion in incentives had been paid to providers meeting MU criteria (Brice et al., 2018).

HITECH financial incentives for adopting EHRs are linked to the 'meaningful use' of the EHR systems. 'Meaningful use' means that providers must have systems that include several core components, including electronic patient history, electronic prescribing, health information exchange (sharing clinical data among clinicians and hospitals), automated reporting of quality performance, and at least one clinical decision support tool (Jha et al., 2009). Meaningful use measures emphasize 'quality, safety, efficiency, care coordination, patient and family engagement, and other public health priorities' (Brice et al., 2018, p. 804).

Meaningful use comprises three successive stages of requirements (CDC, 2017e). Stage one of meaningful use focused on meeting basic system and reporting requirements. Some of the core requirements for stage one were that the providers use CPOE with drug alerts, maintain up-to-date patient records, maintain privacy and security, report standardized quality measures to the CMS, and provide patients with electronic copies of medical records upon request (Ralston et al., 2010). In 2016 the CMS made meaningful use one of four components of the new merit-based incentive payment system (MIPS), which is part of the Medicare Access and CHIP Reauthorization Act (MACRA) (Golder, 2016).

As of 2016, over 95% of hospitals eligible for the Meaningful Use Incentive Program had achieved stage one Meaningful Use of certified HIT. Nearly 90% were at stage 2 of the Meaningful Use Program (Office for National Coordinator of HIT, 2017). However, there is little information on whether meeting meaningful use results in actual improvement in hospital performance (Brice et al., 2018).

THE ROLE OF HIT IN QUALITY REPORTING

A number of quality reporting systems are in place in the United States. These include quality reports required by the federal government and voluntary reports for private organizations such as the Joint Commission. Quality reporting is conducted in different healthcare settings, although the focus is on hospitals. The quality reporting systems for several different types of healthcare services are reviewed in Chapter 5 and not repeated here. What is discussed here, in general, is the use of HIT in the collection, storage and transmittal of quality data.

Healthcare providers in the United States have used some form of HIT to collect, store and transmit quality and safety data for a number of years. If the provider does not have an EHR, quality data is collected by risk management or quality improvement departments. Some quality data can be extracted from the patients' administrative records electronically submitted to CMS for payment of care. Other data are obtained through chart reviews, incident reports or other patient records. Once collected and stored electronically, the data may be analysed for internal quality improvement and transmitted electronically to external agencies. If the provider has an EHR with a quality reporting application, the mining of data for quality reporting can be performed automatically from EHR records, making this a much more efficient method of data mining and processing. EHR-based reporting may provide customized reports of quality and safety for internal use (quality improvement and evidence-based practice) as well as external use (reports required by external agencies). As quality reporting becomes a requirement for payment by the CMS and other payers, this type of EHR application becomes more and more necessary.

THE ROLE OF HIT IN QUALITY IMPROVEMENT

The growth of HIT is driven in part by the desire to improve patient safety and increase the efficiency and quality of healthcare delivery. The use of EHRs has allowed for more complete data collection and easier access and exchange of patient information (Hawley et al., 2014). Computerized prescribing and bar-coding systems have been shown to improve medication safety (Harrington, Kennerly & Johnson, 2011). Some studies have found an

improvement in patient safety and fewer adverse events (Dowding, Turley & Garrido, 2012; Kutney-Lee & Kelly, 2011). One study found that while EHRs did not reduce patient safety events, if one occurred they reduced death, readmission and costs (Encinosa & Bae, 2011). However, several studies (Choo, Johnson & Manias, 2014; Joynt et al., 2015) and a review of 45 studies (Thompson et al., 2015) found no difference in patient safety or clinical outcomes with the use of EHRs.

Some efficiencies have been found with reductions in imaging (Bookman et al., 2017; Kazley et al., 2014; Knepper et al., 2018) and ambulatory care costs (Adler-Milstein et al., 2013). The use of advanced EHRs in hospitals has also been associated with lower costs per patient (Kazley et al., 2014).

On the less positive side, EHR data integrity issues and configurations have been problematic and have appeared in the top 10 of ECRI Institute patient safety concerns for the past five years (ECRI, 2014, 2015, 2016, 2017, 2018). The ECRI Institute is an independent non-profit organization that promotes patient safety and quality through research and consultation to organizations. In 2014 data integrity (accuracy and consistency) issues with HIT systems were the number one concern. In 2016 lack of coordination between HIT configurations and organizational workflow was the number one concern.

Just as important, issues with integrating EHRs into provider care have become apparent. Providers report that EHRs contribute to interruptions, heavier workload, changes in the workflow and altered communication patterns, including decreased interaction with patients (Dudding, Gephart & Carrington, 2018; Fernandez-Lazaro et al., 2013; Papadakos, 2014). A review of studies cites that EHRs are problematic in terms of usability, workflow interruptions and altered interaction with patients (Payne, 2015). Communication issues are especially important because, as Daker-White and colleagues (2015) state, 'The key to patient safety lies in effective face-to-face communication between patients and health care staff or between the different staff involved in the care of an individual patient. Electronic systems can compromise safety when they override the opportunities for face-to-face communication.'

These issues may be reasons why EHRs have not led to higher quality and have even been associated with patient safety issues (Sittig & Singh, 2012; Thirukumaran et al., 2015; Westbrook et al., 2013). In a 2017 Pennsylvania Patient Safety Authority study 889 medication-error reports

listed HIT as a factor contributing to the event within a one-year period. Types of error included dose omission, wrong dose/overdose/extra dose, and involved the computerized order entry system, the pharmacy system and the electronic medication administration record (Lawes & Grissinger, 2017).

The increased workload, interruptions and communication issues associated with EHRs, along with evidence of some quality and safety issues, have made EHRs a major factor in physician dissatisfaction and burnout. Physicians feel that attention to EHRs is too time-consuming and that it takes away from patient care (Jha et al., 2019; Wright & Katz, 2018). In one physician survey, those who felt strongly about this were at a higher risk for burnout (Shanafelt et al., 2016). In another survey nearly one-third of physicians felt that EHRs created new opportunities for error and this perception was associated with lower levels of physician satisfaction (Love et al., 2012). Most serious is a 2019 report summarizing the literature on physician burnout that considers it to be at crisis level, and links it to the use of EHRs (Jha et al., 2019). The report concludes that the United States needs:

> 'significant changes to the usability of electronic health records (EHRs), including reform of certification standards by the federal government; improved interoperability; the use of application programming interfaces (APIs) by vendors; dramatically increased physician engagement in the design, implementation, and customization of EHRs; and an ongoing commitment to reducing the burden of documentation and measurement placed on physicians by payers and health care organizations.' (Jha et al., 2019).

SUMMARY OF HEALTH INFORMATION TECHNOLOGY

In summary, utilization of HIT has grown in the United States over the last decades, especially after implementation of the HITECH Act. Over half of physicians' offices and three quarters of hospitals have at least a basic EHR. Likewise, nearly three-quarters of Americans use the internet for health issues, and 40% have access to their health records. Although EHRs have produced some efficiencies, interoperability is low, they have not been well integrated into provider workflow, and some patient safety issues have emerged. EHR burdens have led to physician dissatisfaction and burnout. The 2019 report of physician burnout, summarized above, points out future needs with regard to EHRs.

4.2 Human resources

4.2.1 *The US healthcare workforce*

Because healthcare is a complex set of services provided in a variety of settings, it is not surprising that the human resources needed to provide these services are also varied and complex. The US Bureau of Labor Statistics (BLS) categorizes healthcare personnel into two main categories: 'healthcare practitioners and technical occupations' and 'healthcare support occupations' (BLS, 2018a, 2018b). The first category is further divided into practitioners with diagnostic and treatment capabilities, and healthcare technologists and technicians. The practitioners with diagnostic and treatment capabilities include chiropractors, dentists, optometrists, pharmacists, physicians, physician assistants, podiatrists and registered nurses (RNs), as well as a large grouping of therapists such as occupational, physical, respiratory, speech-language and others. In providing their specialized care these therapists consult and practise with other health professionals. The subcategory of technologists and technicians includes clinical laboratory technologists and technicians, dental hygienists, licensed practical (vocational) nurses (LPNs) and medical record technicians. The distinction between technologist and technician involves the level of education, which is longer for technologists, and work roles, which are more complex and analytical for technologists. In addition, technologists may supervise the work of technicians. The category of healthcare support occupations includes several types of aides (nursing, psychiatric and home health) and dental assistants.

Box 4.1 lists some of the important occupations under each of these BLS categories and provides a brief summary of the BLS descriptions of a selection of these occupations at the time of publication. The box includes a description of one type of healthcare worker that is listed under 'community and social service worker' – community health workers (CHW), also called community health advisers, lay health advocates, community health representatives, peer health promoters and other titles.

BOX 4.1 The US healthcare workforce

HEALTHCARE PRACTITIONERS AND TECHNICAL OCCUPATIONS

Health care diagnosing and treating practitioners

Physicians form the second largest healthcare occupation in the United States. Physicians diagnose illnesses and prescribe and administer treatment for people suffering from illnesses. They can be generalists (also known as primary care physicians) or specialists. Primary care areas are family practice, internal medicine, paediatrics and obstetrics-gynaecology. Primary care is usually the first contact the patient has with the healthcare system for each episode of care. Physicians in these areas diagnose and treat a wide variety of conditions and tend to remain with the same patient for a period of time. Areas of specialty include general surgery, neurology, neurosurgery, cardiology, cardiac surgery, radiology and psychiatry. Physicians in these areas see patients for one specific need and may not follow the patient over time. Physicians are also divided into two main groups: doctors of medicine (MDs) or doctors of osteopathy (DOs). While both types of physician are similar in their use of all accepted methods of treatment, DOs differ from MDs in their emphasis on the musculoskeletal system, and preventive, holistic care.

Most physicians work in ambulatory care in single- or multi-specialty practices (Chen, 2017; BLS, 2018a). According to a 2018 survey of physicians, the size of physician practices is increasing, with just 18% in solo practice and 44% of physicians in practices of over 10 physicians (Hawkins, 2018). Corresponding to this, the percentage of physicians in independent-owned practice or partnership has declined from 48.5% in 2012 to 31.4% in 2018, with the remainder in medical-group or hospital-owned practices (Hawkins, 2018). In 2017 nearly 19% of primary care physicians were working in hospitals as hospitalists, and another 8% were in other institutional settings such as outpatient community health (BLS, 2018a).

Chiropractors, dentists, optometrists and podiatrists diagnose and treat patient conditions in the following respective areas: musculoskeletal, oral (teeth and mouth), eyes and feet.

Pharmacists oversee the dispensing of prescription drugs to individuals. They interact with healthcare providers and patients, advising them on the selection, dosage, interactions and side-effects of medications. They also work with physicians and other healthcare providers to monitor patients on medications to make sure that the medications are being taken properly and that levels of the medication are within recommended limits.

Registered nurses (RNs) are the largest healthcare occupation in the United States. Their roles span those of an independent specialized practitioner (advanced practice RNs (APRNs) such as nurse practitioners), some with scope of practice similar to a primary care physician, to home care and bedside care givers employed in healthcare institutions such as hospitals, home health agencies and nursing homes.

Around 85% of employed RNs worked in patient care settings in 2017, a slight drop from the 90% in 2008 (Smiley et al., 2018; BHPr, 2010). In these settings 55.7% of RNs worked in hospitals, 9.4% in ambulatory care, 3.4% in public and community health, 6.2% in home health/hospice and 5.3% in long-term care (Smiley et al., 2018). Only 2.6% worked in academic settings, a drop from 3.8% in 2008. Between 2008 and 2017 there has been a concomitant increase in employment in non-patient care settings, such as insurance, policy, regulatory, licensing and other: from 4% in 2010 to 11.8% in 2017. In hospitals RNs are likely to be staff nurses, managers, administrators, patient coordinators and educators.

Ten per cent of RNs hold advanced degrees and a title of advanced practice RN (APRN) (up from 6% of the RN workforce in 2008). APRNs include nurse practitioners, nurse anaesthetists, nurse midwives and clinical nurse specialists. Nurse practitioners and nurse midwives tend to work in community settings where they provide primary healthcare to women, families and children, whereas nurse anaesthetists and nurse clinicians tend to work in hospitals and other institutional settings. The scope of practice of APRNs are determined by state law. APRNs practise independently or with limited physician oversight in 39 states. In many states they can diagnose conditions, refer patients to other providers, order tests and prescribe certain drugs (AANP, 2018).

Physician assistants (PAs) provide diagnostic, therapeutic and preventive healthcare services under the supervision of physicians. PAs may work in primary care areas, such as general internal medicine, paediatrics and family medicine, or in specialties such as general surgery, thoracic surgery, emergency medicine, orthopaedics and geriatrics. PAs should not be confused with medical assistants, who perform routine clinical and clerical tasks.

The duties of PAs are determined by state law. PAs are licensed to practise medicine with physician supervision. They may perform examinations, diagnose, order tests and treatments and prescribe certain medications. These healthcare professionals may be the principal care providers in rural or inner-city clinics.

Occupational therapists (OTs) work with patients who are disabled or injured to help them improve their ability to perform activities of daily living and to recover or develop new work skills. For patients with permanent loss of function, OTs help them find ways to compensate for the loss.

Physical therapists (PTs) diagnose and treat patients with illnesses or injuries that limit movement and physical function. They focus on improving patient movement, pain reduction, restoration of physical function to the highest degree possible and prevention of disability if possible. PTs also work to prevent loss of mobility and improve patients' health by promoting fitness and wellness-oriented programmes.

Respiratory therapists (RTs) care for patients with cardiopulmonary (heart and lung) disorders. They practise under the direction of physicians and consult with physicians and other healthcare staff. They are responsible for supervising and providing all respiratory care therapeutic treatments and diagnostic procedures. RTs typically care for patients on ventilators in intensive care units of hospitals, a role that requires a high level of independent judgement.

Speech-language therapists (pathologists) diagnose and treat disorders of speech, language, cognition, communication and swallowing. They diagnose speech and language problems and work with patients and families to address these problems in patients to the highest degree possible.

HEALTHCARE TECHNOLOGISTS AND TECHNICIANS

Clinical laboratory technologists and technicians, also known as medical technologists and technicians respectively, perform laboratory testing for the detection, diagnosis and treatment of disease.

Dental hygienists perform dental examinations, teeth cleaning and education of patients. The tasks they perform may vary by state.

Licensed practical or vocational nurses (LPNs or LVNs) provide basic bedside care – under the direction of physicians and registered nurses – for people who are sick, injured, convalescent or disabled. They perform technical aspects of care such as taking patients' vital signs, giving injections, drawing blood, monitoring intravenous lines, inserting and monitoring urinary catheters, dressing wounds and other such care. They may assist patients with bathing, dressing, feeding, moving in bed, standing and walking.

Medical records and health information technicians maintain patients' health information and medical records. This includes the patient's history, symptoms, diagnostic and treatment orders and results, and other healthcare provider services. Technicians must ensure that patients' medical records are accurate, accessible and secure. Their work entails regular communication with physicians and other healthcare professionals to clarify or obtain additional information. With the increasing use of EHRs, many of these technicians work with EHR computer software.

HEALTHCARE SUPPORT OCCUPATIONS

Nurses' aides (nursing assistants or unlicensed assistive personnel) work in institutions such as hospitals and nursing homes and perform routine tasks under the supervision of nurses and physicians. Nurses' aides may or may not be required to be certified by the state. They help patients with activities of daily living such as eating, dressing, feeding, bathing and mobility. They also escort patients, answer call lights, deliver messages, serve meals and make beds. They may be responsible for routine nursing care such as taking a patient's vital signs. In nursing homes they are the principal care-givers and have the most contact with the residents.

Psychiatric aides care for mentally or emotionally impaired individuals in psychiatric units and facilities. These aides typically work under the direction of psychiatric nurses. In addition to helping patients with activities of daily living, they socialize with patients and work with patients in recreational activities, observing and reporting on patient status to the professional staff.

Home health aides and personal and home care aides help people who require personal care in their homes, residential facilities, hospices and day programmes. As with other types of aide, they work under the supervision of a nurse. They may provide long-term care for individuals with physical or mental problems who need more care than family members can provide, or they may provide short-term care to individuals who are recovering from illness or surgery (such as someone just discharged from hospital). Personal care aides may do light housekeeping jobs such as washing clothes, shopping for food, preparing meals and accompanying patients on errands or to medical appointments.

Dental assistants work under the supervision of a dentist in dental offices. They prepare dental instruments, update records and assist the dentist with procedures.

COMMUNITY AND SOCIAL SERVICE OCCUPATIONS

Community health workers (CHWs) are lay members of communities who work either for pay or as volunteers under the supervision of healthcare professionals in urban and rural community healthcare settings (APHA, 2019; BLS, 2018b). Since CHWs often have community and ethnic ties they may provide interpreting and translation services, culturally appropriate health education and informal counselling, and are therefore ideal conduits for reducing healthcare disparities (APHA, 2019). CHWs may provide some hands-on services such as first aid and blood pressure, glaucoma and hearing screenings. They may help patients with filling out insurance applications, following treatment plans, and working out

their wellness or disease management goals (Bielaszka-DuVernay, 2011). They may go with patients to appointments or help them find transport or child care.

The use of CHWs in the United States is growing, particularly now that the country is in a period of professional workforce shortages and tight state and federal budgets. Using CHWs in the healthcare team is also in line with the World Health Organization's call in 2006 for 'a health workforce which is matched in number, knowledge and skill sets to the needs of the population and which contributes to the achievement of health outcomes by utilizing a range of innovative methods' (WHO, 2006).

Sources: BLS, 2017, and references noted in box text.

4.2.2 *Trends in the US healthcare workforce and international comparisons*

Table 4.5 presents the numbers of employed workers in the United States in the occupations described above per 100 000 population from 2000 to 2017 (from 2015 to 2017 for CHWs). Unless stated otherwise, data are at the national level: trends may be different at the state level. Increases in employment/100 000 population occurred with all types of personnel, though the increase was variable. The smallest increases occurred with registered nurses (RNs), licensed practical nurses and some healthcare technologists and technicians. There were also smaller increases in the support occupations such as nurses' aides and dental assistants. Physicians, chiropractors, physician assistants and several types of therapists had large increases. What is noteworthy about these trends is that most of the 'diagnosing and treating practitioners' occupations experienced large increases (with the exception of RNs), while most technologists, technicians and support personnel had moderate to small increases.

TABLE 4.5 Employed US healthcare personnel per 100 000 population, 2000–2017

OCCUPATION	2000	2005	2010	2015	2016	2017	Percent change
HEALTHCARE PRACTITIONERS AND TECHNICAL OCCUPATIONS							
Health Diagnosing and Treating Practitioners							
Physicians, including surgeons	114.2	166.9	191.9	200.4	201.1	205.0	79.5
Chiropractors	5.7	8.2	8.5	10.0	10.2	10.3	82.6
Dentists	29.2	33.9	33.8	36.4	37.9	38.5	32.1
Optometrists	7.4	8.0	8.6	11.0	11.3	11.5	53.4
Podiatrists	2.4	2.8	3.0	3.0	3.0	3.0	22.1
Pharmacists	65.4	77.7	86.8	92.2	94.6	95.1	45.6
Registered nurses	778.1	801.4	860.1	856.2	884.3	894.1	14.1
Physician assistants	18.8	21.4	26.4	30.7	32.2	33.6	78.9
Occupational therapists	24.3	29.6	32.5	35.8	36.5	38.8	59.3
Physical therapists	37.5	51.2	58.4	65.4	67.1	69.3	84.7
Respiratory therapists	25.6	32.3	35.4	37.5	39.2	39.4	54.2
Speech-language therapists and pathologists	25.5	32.0	36.5	41.0	42.1	43.8	71.8
Other therapists	14.2	15.9	17.4	16.3	16.6	16.6	16.9
Other health diagnosing and treating practitioners	3.9*	23.1*	14.3*	71.9	75.8	81.0	*
HEALTHCARE TECHNOLOGISTS AND TECHNICIANS							
Clinical lab technologists and technicians	90.6	100.7	104.0	100.0	101.2	99.2	9.4
Dental hygienists	45.9	54.5	57.5	62.5	63.4	65.1	41.6
Licensed practical/vocational nurses	209.0	240.3	236.6	217.4	217.4	216.1	3.4
Medical records and health information techs	51.1	54.3	57.0	59.2	61.9	62.8	22.9
Other healthcare practitioner and technical occupations	247.8	350.0	384.3	418.5	439.6	451.8	82.3

OCCUPATION	2000	2005	2010	2015	2016	2017	Percent change
HEALTHCARE SUPPORT OCCUPATIONS							
Nursing, psychiatric and home health aides	590.0	714.3	809.4	737.0	735.9	736.1	24.7
Dental assistants	77.6	91.6	95.2	100.8	101.3	103.7	33.6
Other healthcare support occupations	334	56	474	507	515.5	529.2	58.23
COMMUNITY AND SOCIAL SERVICE OCCUPATIONS							
Community Health Workers	–	–	–	15	15.8	16.8	12.24

Notes: The table uses numbers employed rather than licensed or active professionals, so the numbers will be lower than those categories but higher than full-time equivalents (FTEs) of employed personnel

* From 2000 to 2010 there were not many occupations in this category, therefore a percent change for the years 2000–2017 was not calculated

Calculations: The ratio of employed in the occupation to population was multiplied by 100 000

Sources: Data from Current Population Survey (CPS), Bureau of Labor Statistics, HRSA, DHHS; US Census Bureau, Census 2000, 2005, 2010, 2015, 2016, 2017 and population estimates for those years

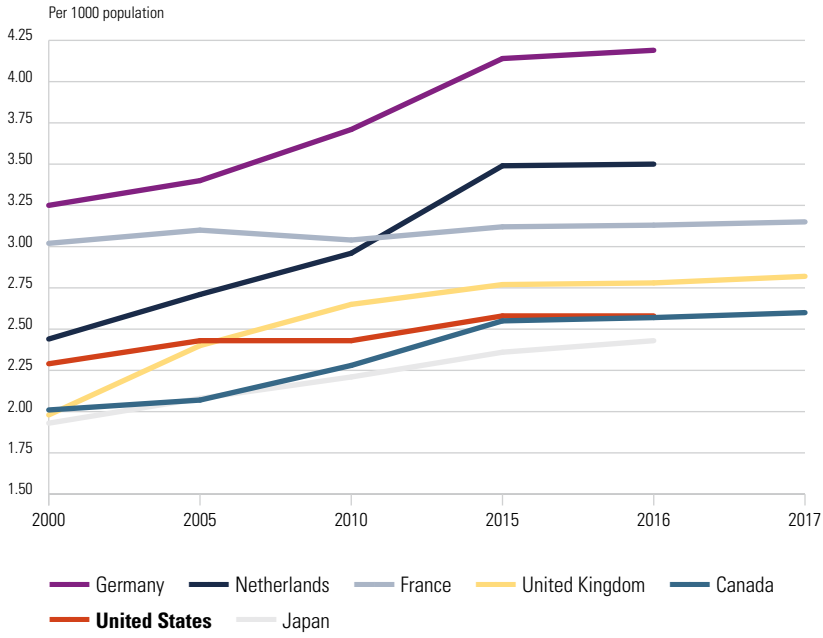
The last row in Table 4.5 shows the trend in employment of community health workers, which the BLS assigned an occupational code to and started tracking in 2015 under 'Community and Social Service Occupations'. This group of healthcare workers grew 12% from 2015 to 2017. Other community and social service occupations include social work and counsellors.

Figs 4.6 and 4.7 provide a seven-country international comparison of trends in doctors and nurses respectively. These data for the United States will differ from the employment data above because they reflect supply-side numbers which will be higher than employment (demand-side) numbers. Comparisons between countries must be made with caution due to differences in the data collected from country to country and over time. Countries may also differ in whether they report those who are professionally active or only those who are practising in direct care. Definitions of these categories are in the tables.

Fig. 4.6 presents the number of physicians per 1000 population for seven OECD countries. The trend for physicians in the Netherlands is difficult to interpret since the data represent practising physicians from 2000 to 2010, and professionally active physicians from 2015 to 2016. The rest of the countries' data are consistent for the number of practising physicians

per 1000 population. The figure demonstrates that three of seven OECD countries – France, Germany and the Netherlands – tend to utilize a greater number of physicians per population than the remaining four. Of those three, the German physician to population ratio was the highest and grew the most. Of the four countries with lower physician to population ratios, Japan's ratio started at the bottom in 2000 and although it increased slightly it remained the lowest ratio of all seven countries for the 16 recorded years. Canada and the United Kingdom also started low, but increased moderately by 2016. The United States started in the middle of the seven countries and did not change significantly.

FIG. 4.6 Physicians per 1000 population in seven OECD countries, 2000–2017



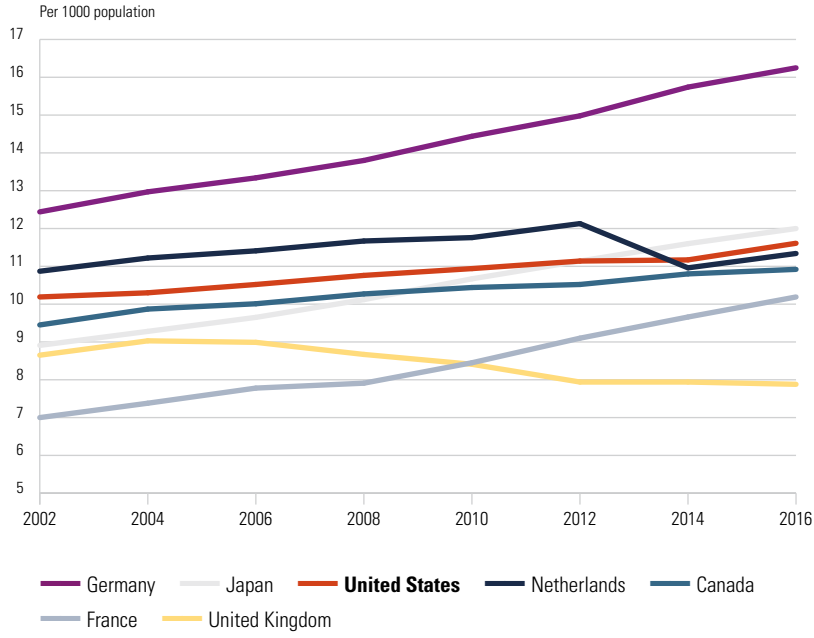
Notes: [a] Data from all countries except Netherlands = number of practising physicians. Data from Netherlands = number of practicing physicians from 2000–2010, number of professionally active physicians from 2015–2016. Practising physicians provide services directly to patients. Professionally active physicians include practising physicians plus those who work outside direct patient care

Source: OECD, 2018a

Fig. 4.7 plots the trends in nurses, both professional and 'associate' (includes licensed practical nurses in the United States) in seven OECD countries from 2002 to 2016, the years in which the most data existed for all seven countries. The figures show the professionally active nurses for

all countries except the Netherlands and the United Kingdom. These two countries had more consistent data for practising nurses, which is what is presented in the figure. Practising nurses are those who provide services directly to patients. Professionally active nurses include practising nurses plus those who work outside of direct care. As with physicians, Germany had the highest nurse to population ratios of all seven countries in all years and the ratio has increased nearly the most. The United States had the next highest, with a small to moderate increase over the years. The United Kingdom's ratios dropped over the years and were the lowest of all countries in 2016. France started with the lowest ratios but increased significantly through all years, surpassing that of the United Kingdom by 2016.

FIG. 4.7 Nurses per 1000 population in seven OECD countries, 2002–2016



Notes: The total number of nurses corresponds to the sum of professional nurses and associate professional nurses. Head counts are reported for all countries. All countries except the Netherlands and United Kingdom = professionally active nurses. The Netherlands and United Kingdom = practising nurses. Practising nurses are those who provide services directly to patients. Professionally active nurses include practising nurses plus those who work outside direct care

Source: OECD, 2018a

4.2.3 *Distribution of the healthcare workforce*

This section addresses three types of distributional issues with the healthcare workforce. The first involves the type of practice and setting, the second is geographical, and the third is racial and ethnic representation in the workforce.

PRACTICE AND SETTING DISTRIBUTION

The United States has had a disproportionate number of specialist physicians compared to primary care physicians (PCPs) for many years. Between 1965 and 1992 the 65% increase in physicians was almost entirely in specialist areas (Bodenheimer & Pham (2010). The growth in specialists has since slowed, but that of general primary care physicians has not increased significantly. Between 2005 and 2015 the physician to population ratio of general primary care (family medicine, internal medicine, obstetrics, gynaecology and pediatrics) remained relatively stable, that of primary care subspecialties (of general primary care specialties listed above) increased 33%, and that of non-primary care specialties increased 52% (CDC, 2017a). In 2015 general primary care physicians were 37% of the physician workforce, primary care subspecialists were 11%, and non-primary care specialists comprised the remaining 52%. Compare those proportions of physicians to the percentage of office visits to these providers: in 2015, 47 % of office visits were to PCPs while 40% were to specialists (Frost & Hargraves, 2018). Community health centres in particular have severe shortages of PCPs, reporting vacancy rates of 25% for family physicians (NACHC, 2016). A 2018 report estimated that in 2016 a shortage of 13 800 PCPs existed, with the shortfall expected to increase to 14 ,800 (25th percentile) to 49 300 (75th percentile) by 2030 (AAMC, 2018). In contrast there were no to small shortfalls of various types of specialist in 2016. The shortfall of specialists is expected to grow, but to still be less than that of PCPs in 2030.

Some workforce analysts question whether there is an overall shortage of physicians, or whether instead, the shortages are mostly in underserved areas (Salsberg, 2015). According to these analyses, assessments of shortages should take maldistributions into consideration, as well as additions to

the primary care workforce supply (greater utilization of NPs and PAs), and lowering of demand through improvements in care coordination, technologies and other efficiencies in the delivery system.

Although nurse practitioners (NPs) and PAs have been filling in some of the gaps in primary care (in 2012 NPs comprised 20% of primary care providers in the United States (Poghosyan et al., 2013)), there is evidence that the primary–specialty physician imbalance is affecting access to primary care, especially in light of the increase in demand due to the ACA. In two simulations (2013 and 2016), median wait times for new patients in primary care were over a week in most states, and some wait times were over 30 days (Rhodes et al., 2014; Polsky et al., 2017). Wait times increased slightly between 2013 and 2016. In 2015, 48% of people in the United States who were sick could not obtain a same-day or a next-day appointment (Mossialos et al., 2015). Studies have also reported low-income patients having increased difficulty in obtaining primary care visits in Medicaid expansion states (Miller & Wherry, 2017).

In nursing, a major distributional issue with regard to area of practice is the low number of RN faculty in nursing education (Bittner & Bechtel, 2017). Nationally, there is an average nurse faculty vacancy rate of 7% with 58% of schools reporting full-time vacancies (Bittner & Bechtel, 2018). This shortage of nursing school faculty is restricting nursing programme enrolments and contributing to the overall nursing shortage. US nursing schools turned away 64 067 qualified applicants from baccalaureate and graduate nursing programmes in 2016 due to insufficient number of faculty and other constraints. Almost two-thirds of nursing schools report a shortage of faculty and/or clinical preceptors as a reason for not accepting all qualified applicants into their programmes (AACN, 2017).

Another distribution issue is that institutional settings, such as hospitals and nursing homes, appear to have more nurse staffing issues than ambulatory settings such as doctors' offices, home care and school health. Currently hospital RN vacancy rates average 8.2% (Nursing Solutions, 2018). Community health settings are also understaffed. Federally funded community health centers (CHCs) have nurse practitioner vacancy rates of 13% and RN vacancy rates of 12% (NACHC, 2016).

GEOGRAPHICAL DISTRIBUTION

Physician supply varies by region and by urban or rural locations. Physician to population ratios vary by state, from close to 450 per 100 000 in Massachusetts to 180 per 100 000 in Mississippi (AAMC, 2017). Primary care physicians range from 135 per 100 000 to 65 per 100 000 population. The urban-rural disparity can be seen by the fact that there are around 80 primary care physicians per 100 000 people in the United States, yet there are only 68 per 100 000 practising in rural areas compared with 84 per 100 000 in urban areas. Similar shortages are found in urban underserved communities. (Goodfellow et al., 2016). In the health professional shortage areas (HPSAs) there is only one primary care physician to 3500 people.

The supply of RNs is uneven across regions and states. In one analysis the South and West regions are predicted to have the greatest shortage by 2030 (Zhang et al., 2018). Another analysis reports little growth in the Pacific and New England areas, but 40% growth in the East and West South-Central (Auerbach, Buerhaus & Staiger, 2017).

Rural areas tend to have lower nurse-to-population ratios. Nurses who live in rural areas may commute out of the area to work. At the same time the rural population is older, poorer and sicker (US Census Bureau, 2016b).

ETHNIC/RACIAL AND GENDER DIVERSITY

Compared to their proportion in the general population, racial and ethnic minorities are under-represented in the health diagnosing and treating professions listed in Table 4.5 (HRSA, 2017). In 2014 African Americans, Hispanic/Latinos and American Indians made up just 9% of the physician workforce but 35% of the general population (Metz, 2017). The proportion of new medical school graduates who are Hispanic/Latino and African American was higher (15.3%), but the proportion is still far below that of the population (Deville et al., 2015). In nursing, 19% of the professionals were minorities in 2017 (Smiley et al., 2018). Minorities are also under-represented in many of the healthcare technologists and technician occupations (HRSA, 2017).

Gender representation has also been an issue among the health diagnosing and treating professions and in some of the healthcare technologists and technicians occupations. Females are underrepresented among physicians,

being only 30.1% of practicing physicians (Deville et al., 2015). However, close to half of new medical school graduates are female, indicating a significant improvement. In contrast, males are under-represented in nursing. In 2017, 9.1% of nurses were male, up from only 8% in 2015 (Smiley et al., 2018). Men in nursing are slightly more likely than women to be from a minority group, so increasing the proportion of males has the added benefit of reducing racial/ethnic disparity (Villarruel et al., 2015).

In contrast, among healthcare support and personal care workers, racial and ethnic minorities are well represented, while Whites are under-represented (HRSA, 2017). Women tend to be over-represented. For example, 95% of dental assistants and 87% of nursing aides are women.

FUTURE ADEQUACY OF PHYSICIANS AND NURSES

Despite increases in the physician to population ratio over the past decades the Association of American Medical Colleges (AAMC) believes that the supply of physicians will not be sufficient to meet demand in the future. The AAMC predicts a shortage of between 42 600 and 121 300 physicians by 2030 (AAMC, 2018). This includes a primary care physician shortage of 14 800 to 49 300 and a specialty physician shortage of 33 800 to 72 700. Supply models take into account an ageing physician supply and the use of other health professions. Demand models take into account increased demand from a growing, ageing population and changes in care delivery. The analysis shows that removing rural, under- and uninsured disparities in access to care would result in even higher physician requirements.

HRSA models examine physicians by specialty. For primary care physicians (PCPs) HRSA predicts an 11% increase in supply, and a 17% increase in demand by 2025 – a shortage of 23 640 PCPs (HRSA, 2016). However, the analysts believe that with delivery system changes and full utilization of NPs and PAs, the shortage can be mitigated.

Nursing experiences chronic shortages, and at the time of writing was in a shortage according to a 2018 survey of chief nursing officers (CNOs) (Kennedy, 2018). Nearly three quarters of the CNOs reported their shortages were moderate to severe, and that it was affecting patient care and staff morale. Most expected shortages to worsen over the next five years. This contrasts with a 2017 study by the National Center for Healthcare Workforce Analysis which predicts that there will be an oversupply of RNs by 2030

(NCHWA, 2017). Another study using different methodology predicts that there will be a shortage of over 510 000 RNs by 2030, with the worst shortages in the South and West (Zhang et al., 2018).

4.2.4 *International mobility of the healthcare workforce*

Included in the numbers of US healthcare professionals in the previous section are international immigrants, who add to the number of practising healthcare professionals. In contrast, healthcare professionals also emigrate from the United States, which reduces their number. Whether the total numbers of healthcare professionals are higher or lower depends on the net migration. The United States and other high-income countries tend to have positive net migration (Kaelin, 2011; Prescott & Nichter, 2014) and over the last decade there has been a 60% rise in the number of migrant doctors and nurses working in OECD countries (WHO, 2019). On average one quarter of the doctors and 7.5% of nurses in the United States come from abroad (Crisp & Chen, 2014).

Most health professionals migrating to the developed countries are from developing countries (Aiken, 2007; Starfield & Fryer, 2007; Mackey & Liang, 2012). These source countries can least afford to lose healthcare personnel. Firstly, they have fewer economic resources for training healthcare professionals (Mackey & Liang, 2012). They cannot afford to use their limited resources to train health professionals only to see them leave the country (Tankwanchi, Vermund & Perkins, 2015). Secondly, they tend to have lower physician and nurse to population ratios than other countries (Mackey & Liang, 2012; Okeke, 2014). For example, the nurse-to-population ratio is ten times higher in North America than in South America (Kaelin, 2011). The WHO has estimated that the world's 57 poorest countries have health workforce shortages of 2.4 million (Mackey & Liang, 2012). Third, they have a higher burden of disease such as HIV/AIDS, malaria, tuberculosis and other infectious diseases that require financial and health workforce resources (Mackey & Liang, 2012).

These international migration patterns have a number of causes. Although countries of all income levels have faced healthcare workforce shortages, the higher-income countries have had the advantage of being attractive migration destinations and have actively recruited medical and

nursing graduates from low- and middle-income countries. These graduates are attracted to countries such as the United States for the prospects of better training and career opportunities, higher income, better working conditions and greater personal freedom (Hagander et al., 2013; Kaelin, 2011; Mackey & Liang, 2012; Okeke, 2013, 2014),

There have been few studies of the impact of international medical and nursing graduates on the US healthcare system. Obviously, immigrants add to the healthcare workforce supply, but there is little evidence that they improve distributional issues, such as primary care, specialty or geographical maldistributions (addressed in the preceding section). There is no evidence, for example, that nurse immigrants locate in areas of healthcare need, such as rural areas, in any greater proportion than native-born nurses (Aiken, 2007). International medical graduates (IMGs) may fill gaps in primary care in some rural areas, but in other areas they are less likely to work there than US graduates (Thompson et al., 2009). Furthermore, a reliance on healthcare professional immigration reduces the incentive to expand educational capacity, increase matriculates, raise wages, improve working conditions or create incentives to work in high-need areas in the United States. As a consequence, future workforce shortages and maldistributions could be exacerbated (Flynn & Aiken, 2002). On the positive side, international graduates are ethnically more diverse than native-born graduates, although relatively small proportions of international graduates are Black/African American or Hispanic, which are the predominant racial and ethnic groups in the United States (Aiken, 2007).

US health professional experts have called for greater accountability by the United States so that the country is not responsible for a 'brain drain' from other countries. Experts encourage adherence to the WHO 2010 *Global Code of Practice on the International Recruitment of Health Personnel*, which calls upon developed countries to: (1) consider the needs of low- and middle-income countries with net emigration and severe health workforce shortages; (2) deal with their health disparities and staffing needs with their own domestic resources; (3) provide assistance to aid in retention and training in source countries; and (4) engage in exchange and reporting of data to track implementation of the Code (Mackey & Liang, 2012; Mpofu, Gupta & Hays, 2016; WHO, 2010).

4.2.5 *Regulation, education and training of the healthcare workforce*

Most healthcare workers are licensed professionals who are college graduates, or who have formal educational training beyond high school. Entry to some of these professions, such as that of physician, advanced practice nursing, physician assistant and the therapies requires advanced degrees and long educational periods. In contrast, unlicensed non-professionals usually have only a high school education and may or may not receive additional formal training and certificates.

This section focuses on the regulation, education and training of several of the professional occupations categorized as 'health diagnosing and treating occupations' by the BLS: physicians, dentists, pharmacists, nurses and PAs. All of these professional occupations require several years of college, graduation from an accredited school in the specific occupation, and licensing or certification by the professional's state of practice. Periods of residency training may also be required. All information is taken from the *Occupational Outlook Handbook of the BLS* (BLS, 2018c).

PHYSICIANS

To become a physician requires the greatest amount of formal education and training among all the healthcare occupations. A physician typically completes four years of undergraduate school, four years of medical school, and three to eight years of internship and residency. An individual desiring a career in medicine may either pursue a medical doctorate (MD) or doctor of osteopathy (DO) degree. Following medical school, most MDs enter a residency in their specialty. Most DOs go into a 12-month internship before entering a two-to-six year residency.

All states, the District of Columbia and US territories require that physicians be licensed in order to practise. To be eligible to take licensing exams, physicians must graduate from an accredited medical school. To be licensed, MDs must pass the US Medical Licensing Examination (USMLE) and DOs must pass the Comprehensive Osteopathic Medical Licensing Exam (COMLEX). The exams and licences are given at the state level. Reciprocity is granted by most, but not all, states. IMGs can receive a licence after passing the exam and completing a US residency.

MDs and DOs seeking board certification in a specialty may spend up to seven years in residency training. To be certified by the American Board of Medical Specialists (ABMS) or the American Osteopathic Association (AOA) they must take a certification exam. To be certified in a subspecialty, another one to two years of residency is required.

A medical career, like many of the healthcare professions, requires that individuals continue their education and training throughout their lifetime in order to keep up with medical advances and changes in the occupation. The medical profession requires continuing education credits in order for physicians to keep their licence. In addition to 'keeping up' with changes, physicians may advance their career by gaining expertise, developing a reputation for excellence among colleagues and patients, teaching medical students, residents and new physicians, and becoming supervisors or administrators.

DENTISTS

To become a dentist, an individual must graduate from an accredited dental school and pass written and practical licensing examinations. Dental school is usually four academic years. During the second half of their education, students begin to treat patients under the supervision of licensed dentists. On completion of studies and practicum, students will receive a degree of Doctor of Dental Surgery (DDS) or Doctor of Dental Medicine (DMD).

All 50 states and the District of Columbia require dentists to be licensed. In most states the licence is awarded to students who graduated from an accredited dental school and who passed the National Board Dental Examination and a practical exam administered by state or regional testing agencies. Specialty licences in nine different areas require two-to-four years of postgraduate education and may also require the completion of a residency and a special state examination. Most new dentists open their own practice immediately after dental school but some work for established dentists as associates for one or two years to gain experience and save money to equip an office of their own.

PHARMACISTS

To practise in the United States a pharmacist must acquire a PharmD degree from an accredited college or school of pharmacy. These programmes usually take four years to complete. After graduating from a PharmD programme, some graduates go for further training in residency programmes or fellowships, especially if they plan to work in clinical settings, where a residency may be required. Pharmacists may obtain a master's degree in business administration in order to help them run their own pharmacy.

Pharmacists must have a licence to practise. To obtain a licence, an individual must have graduated from an accredited PharmD programme and must pass several exams. All states require that pharmacists pass the North American Pharmacist Licensure Exam (NAPLEX), which tests pharmacy skills and knowledge. Other exams are required depending on the state. Hours of experience in a practice setting are also required. Often this can be accomplished while in the PharmD programme.

REGISTERED NURSES

The educational requirements for RNs are complex because there are three educational paths to becoming an RN: a diploma, an Associate Degree in Nursing (ADN) and a Bachelor of Science Degree in Nursing (BSN). In addition, to become an advanced practice registered nurse (APRN) – which includes clinical nurse specialist, nurse anaesthetist, nurse midwife and nurse practitioner – a Master of Science in Nursing (MSN) is required, and a Doctor of Nursing Practice (DNP) is becoming common (Cronenwet et al., 2011).

An ADN is the most common entry into the profession, followed by a BSN. ADN programmes take two to three years to complete while BSN programmes take four years. Diploma programmes, which take three years to complete, do not result in a degree and are conducted by hospitals. They are a remnant of the old educational system, and few remain today. Of the three programmes, the BSN gives the student more training in areas such as communication, leadership and critical thinking, which are important in nursing practice today. It also provides more clinical experience in nonhospital settings. The BSN is usually required for administrative positions. For these reasons the BSN offers the graduate more employment

and advancement opportunities. Since many RNs with ADNs return for a BSN, special RN-to-BSN programmes have been designed by most schools of nursing. Accelerated programmes also exist that allow a college graduate in another field to complete their BSN in 12–18 months. Graduates of an accredited school of nursing must also pass the National Council Licensure Examination (NCLEX-RN) to practise. Licences are granted on a state-by-state basis with reciprocity in most states.

RNs engage in lifelong learning. Continuing education is required by many states. To demonstrate expertise in a specific area, RNs may choose, or their job may require them, to be credentialled through the American Nursing Credentialing Center, the National League for Nursing or other agencies. Specialty areas of credentialing include ambulatory care, gerontology, informatics, paediatrics and many others.

There are many opportunities for advancement in nursing. Most RNs begin as staff (bedside) nurses in hospitals but many move to other settings or are promoted to managerial, administrative or teaching positions within the hospital. With an advanced practice degree, RNs can work independently or in collaboration with physicians. Each state defines its requirements for advanced practice roles. For example, in some states APRNs may prescribe medicine but in other states they cannot. Some RNs go on to become educators in schools of nursing, which requires an MSN or PhD. Other RNs start their own businesses in ambulatory, home care or chronic care. Still others join insurance, managed care or pharmaceutical companies.

PHYSICIAN ASSISTANTS

To become a PA an individual must graduate from an accredited programme and pass a national certification exam. Many entering students are RNs, emergency medical technicians (EMTs) and paramedics. The programmes, offered at community colleges, academic medical centres, medical schools and colleges, take at least two years full-time. The PA programme combines classroom instruction with clinical experience. Students may have the opportunity of internships with physicians while in training, which may lead to employment after graduation. Upon completion of an accredited PA programme the graduate is eligible to sit for the PA certification exam and may in addition receive an associate, bachelor's or master's degree.

To obtain a certificate to practise, graduates of accredited PA programmes must pass the Physician Assistant National Certifying Examination, administered by the National Commission on Certification of Physician Assistants (NCCPA). PAs must engage in continuing education to remain certified. Every two years they must complete 100 hours of continuing education, and every six years they must pass a recertification examination or complete a programme that includes a take-home exam. PAs can pursue further education in medicine, rural primary care, emergency medicine, surgery, paediatrics, neonatology and occupational medicine.

4.2.6 *Physician career paths*

This section investigates the career paths and some of the factors involved in the career choices of physicians. Major factors include levels of reimbursement, malpractice insurance costs and working conditions.

Career choices among physicians include choice of specialty (primary care vs one of several specialties), location of practice (regional and urban or rural), practice setting (inpatient or outpatient) and whether to work in direct patient care.

Given their practice speciality and location, physicians may work in outpatient acute care office settings or in inpatient institutional settings such as hospitals and mental health facilities. In the acute care setting physicians may be in solo or group private practices or they may be employees of a privately owned practice (including hospital-owned), public health organization or community health centre. Physicians in these settings may additionally have practice privileges in one or more hospitals in the area. In inpatient settings, such as private, state or federal hospitals or mental health facilities, physicians tend to work as employees. In hospitals physicians can work as attending physicians (senior level physicians who oversee and teach residents, interns and medical students) or hospitalists (a physician who specializes in hospital care).

Physicians may choose to work outside direct patient care. A physician may decide to work in medical education. They can become administrators in any of the physician practice settings. For example, they can become hospital administrators in such roles as chief medical officer. They may work in insurance as a medical director, or for a private or governmental organization as a researcher.

Factors that contribute to physician career choices include differential physician income, educational curriculum and culture, different practice conditions, medical and societal devaluing of primary care, long hours and opportunity for advancement (Bodenheimer & Pham, 2010; Frisch, 2013; Weidner & Davis, 2018). The income ratio between primary care and speciality practice is particularly important in the choice between those careers (Kruse, 2013). Physicians in specialties can make 50–100% more than those in the primary care and public health areas (Kane, 2018). And although physician income varies given the specialty, educational debt is similar for all physician specialties (Asch, Nicholson & Vujicic 2013). Given that there is an income gap but not a debt gap, debt to income ratios for primary care areas are much higher than the specialties.

In addition to income influencing choice of primary care or speciality, medical school curriculum and culture may influence students to go into specialty practices (Bennett & Phillips 2010). Practising in primary care and in rural areas can be unattractive because these areas of practice involve more hours, more on-call and night work, and rotating shifts (Vick, 2016). Rural areas also have less opportunity for advancement (Bodenheimer & Pham, 2010).

More recently, additional concerns regarding physician career choices have focused on physician dissatisfaction, which can lead to physicians leaving patient care practices. Major factors related to physician dissatisfaction in a 2013 study were: obstacles to providing quality patient care; frustrations with using electronic health records; low autonomy and control over work; higher workload and pace; inadequate allied health and support staff; malpractice concerns; poor practice leadership; and too little collegiality (Friedberg et al., 2014).

4.2.7 *RN career paths*

This section investigates the career paths and some of the factors involved in the career choices of RNs. Major factors include levels of reimbursement and working conditions.

Career choices among RNs include whether to become a nurse educator, whether to practise in a patient care or public health setting (hospital or other inpatient or outpatient healthcare setting), or whether to work in a non-patient care setting. Nurses pursuing nursing education must receive

advanced degrees beyond the bachelor's degree. Often these nurses work in a patient care setting for several years before pursuing the higher education and career in education.

Nurses working in patient care may practise in inpatient institutions, such as hospitals and nursing homes, or outpatient centres, such as doctors' offices, community health centres, dialysis facilities, home care, hospices and public schools. In these settings they may provide direct patient care or become a manager or administrator. Nurses working in direct patient care may begin this career with the basic nursing diploma or degree and an RN licence. Nurses pursuing management roles may acquire an education beyond the basic RN, often a master's in business administration (MBA) or a master's in healthcare management.

As mentioned in prior sections, there is a severe shortage of nurse educators. Factors that are thought to contribute to the low number of RNs in education include: additional educational requirements; becoming an educator later in life; low academic salaries; more attractive jobs in other careers for RNs with graduate degrees (partially a result of the first factor); high educational costs (put that together with low salary and the returns to educational investment are low); high student to faculty ratios; and insufficient governmental funding of nursing education (Cash et al., 2009; Westphal, Marnocha & Chapin, 2016).

RNs' intention to work in direct patient care is also related to working conditions. Chief among the work environment issues are: inadequate staffing; high workload; high job demands and stress; lack of time to do adequate work; lack of leadership support; disempowerment;and lack of collegial relationships with the healthcare team (Dotson et al., 2014; Nei, Anderson Snyder & Litwiller, 2015; Twigg & McCullough, 2014). Salaries and benefits can also be an issue in hospitals, nursing homes and other settings (McHugh et al., 2011).

5

Provision of services

Chapter summary

- Insured individuals tend to enter the healthcare system through a primary care provider or they may go directly to a specialist.
- Uninsured individuals often do not have a regular primary care provider, but instead visit community health centres (which provide care for low-income, uninsured and minority populations) and hospital emergency rooms. Due to out-of-pocket costs, uninsured individuals may not seek out care until an emergency arises. Individuals may go to retail clinics or urgent care centres for minor problems.
- US public health is decentralized, with the main locus of power at the state level where services vary. Public health services are underfunded, and tend to be driven by immediate priorities.
- The number of hospital discharges and lengths of stay have fallen over the past decades, with more acute-care services, such as surgery, being performed on an outpatient basis.
- Mental health services have shifted predominantly from inpatient to outpatient, accompanied by substantially increased use of pharmaceuticals and reduction in provision of psychotherapy and mental health counselling.

- The utilization of post-acute care services such as rehabilitation, intermittent home care and sub-acute care increased over the past decades.

- Pharmaceuticals are highly utilized in the United States.

- Palliative care is received mostly through hospice services. Hospice care has increased due to an expansion of Medicare benefits in 1983.

- The informal care-giver (usually family or friends) plays an important role in US healthcare; 14% of adult Americans provide informal care.

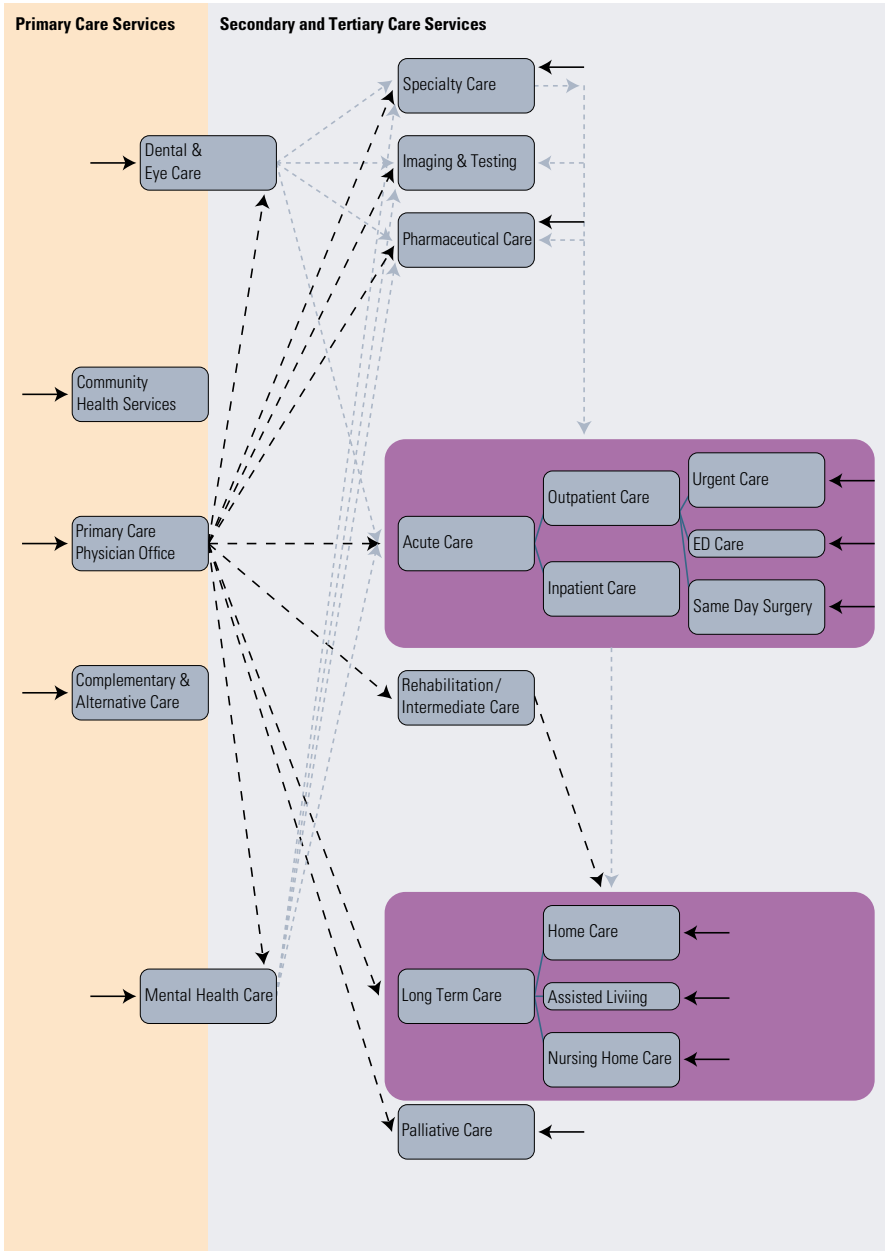
- Vulnerable populations in the United States include racial and ethnic minorities, those with low income, the uninsured, the disabled, the homeless, women, children, persons with HIV/AIDS, the mentally ill, the elderly and those living in rural areas. Federal, state and private agencies have programmes for reducing disparities in these populations.

5.1 Patient pathways

This section presents two scenarios representing the pathways for care for an insured and an uninsured individual in the United States. A patient pathway is the route individuals take from their first contact with the healthcare system to the completion of care. It includes their initial entry into the system, provider visits, referrals, tests and treatments. The route may be anything from a short visit to a primary care provider to a more complicated path through a series of services, culminating in institutionalized care. The route may also involve only primary care services, only acute-care services, only long-term care services or all of these. Two issues to note from the two sets of pathways are access to care and coordination of services.

Fig. 5.1 presents pathways for an insured patient and Box 5.1 discusses an example of a pathway for an insured individual. Individuals with all types of insurance seeking preventive care, such as annual check-ups, will most probably go to a primary care provider on a regular basis.

FIG. 5.1 Healthcare pathways for insured patients



Notes: The short solid arrows pointing to the services along the periphery of the figure indicate the various ways a patient may enter the healthcare system depending upon their condition and type of insurance. The broken lines with arrows indicate the paths that can be taken once an individual enters the system

BOX 5.1 Example of an insured person's healthcare pathway

A pathway over a three-year period for an insured (through Medicare) 85-year-old male patient with COPD might be as follows: the patient uses his PCP for regular check-ups. The PCP has ordered medications for the patient's COPD. When the patient presents at a regular visit with increased shortness of breath and weakness, the PCP refers him to a pulmonologist and a cardiologist. The pulmonologist performs tests and changes the patient's COPD medications. The cardiologist performs tests, diagnoses the patient with atrial fibrillation and orders medication for the condition. The patient has one follow-up visit to the two specialists. Within a year the patient passes out at home and is brought into the hospital emergency department. His atrial fibrillation is not being controlled by the medication. The patient is hospitalized, a pacemaker is inserted and his medications are adjusted once again. He is discharged home under the care of his elderly wife and nearby children. Six months later he becomes dizzy and weak and has mobility problems. He is readmitted to hospital. There, medications are adjusted; he is stabilized and he is then transferred to a rehabilitation centre. After several weeks in rehab he returns to his home. His mobility problems return after a few months so his family contacts a home-care agency to have a home health aide help with baths twice a week. Eventually he becomes too difficult to handle at home and he is admitted to a nursing home. While he is in the nursing home, he is hospitalized several times for various illnesses, including pneumonia. His condition does not improve and his family does not wish to pursue more interventions so he receives palliative care prior to dying peacefully in a hospice.

A primary care provider may also be the first contact with the system for individuals needing care for a medical or surgical problem (not an emergency) who are in an HMO, even if the individual needs to see a specialist. The primary care provider (PCP) will evaluate the patient first and make appropriate referrals to specialists, order imaging, testing and medications. If the PCP believes that the patient needs immediate hospitalization, the doctor will have the patient admitted to the hospital, obtaining a referral from the HMO if needed. If the individual is in a PPO or has traditional FFS insurance, they may go directly to a specialist for medical care. Specialists may order imaging, testing, medications and treatments, including surgery or hospitalization if needed. Surgery may be performed on an outpatient basis ('same-day surgery') or with the patient admitted to the hospital (inpatient). For an acute medical condition that is life-threatening or that occurs after

office hours, an individual may also enter the healthcare system through an emergency department (hospital-based) or urgent care centre (free-standing or hospital-based). Visits to these outpatient settings may or may not result in hospitalization.

Once a patient is hospitalized, they may be discharged home or may continue in the healthcare system by going into rehabilitation or some type of subacute or long-term care, such as home care, assisted living or nursing home care. Finally, patients may progress to palliative care, such as hospice services. Whether a patient receives rehabilitation, long-term care or palliative services, and the duration of those services, may depend on the individual's insurance coverage. Private health insurance generally does not cover long-term care. Long-term care insurance will cover nursing home care, but the great majority of individuals do not carry this supplemental coverage. For those with public insurance (e.g. Medicare and Medicaid), there are limitations on the breadth and depth of coverage for long-term care. For example, Medicare only pays for care in a skilled nursing facility if the patient has been hospitalized first, and the post-hospitalization coverage is limited to a certain number of visits or days, along with co-payments from the patient (see Section 3.7).

Home care, nursing home care, assisted living and palliative care may also be accessed by patients without going through primary or acute-care services. In these cases, patients will be paying out-of-pocket or will have Medicaid or private long-term care insurance to cover the services.

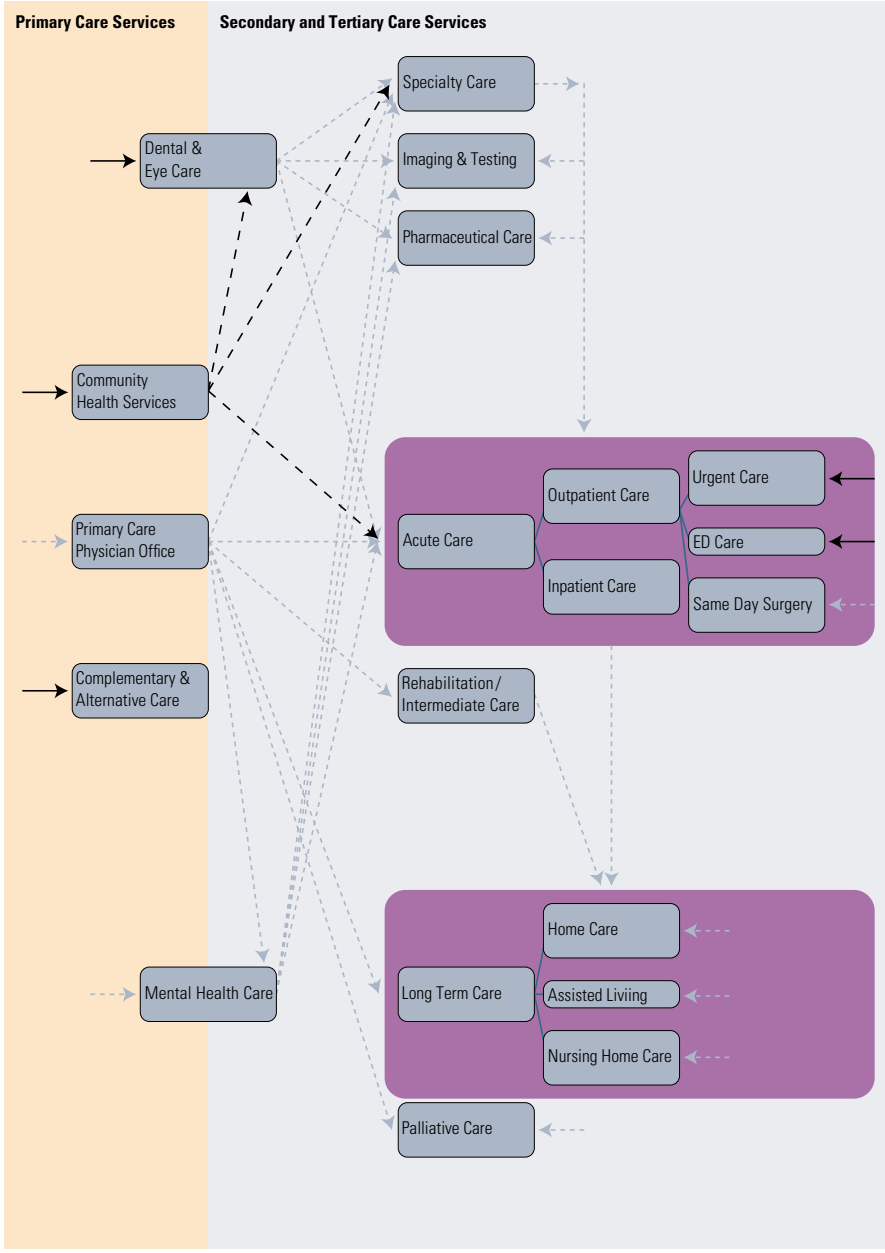
Other portals of entry to the healthcare system for insured individuals include community health services (the 'healthcare safety-net', such as community health centres and public hospitals), which may be used by an insured person for services such as immunizations (e.g. flu vaccinations). Because community health services tend to be used for discrete short-term issues by insured patients, there tend to be no further referrals or connections to other parts of the healthcare system. Insured individuals may utilize complementary and alternative medicine (CAM), but this also tends not to be integrated into the medical side of the healthcare system. Individuals may seek mental health care, which their insurance may partially cover, or they may pay out-of-pocket. Supplemental insurance or OOP payment is usually the way for individuals to receive dental and eye care. First contact providers in those services may refer the patient to other specialists, for imaging, testing, medications or hospitalization. Patients with dental, eye

or mental problems may also first present to their primary care provider who will refer them to the respective service.

The pathways for an uninsured patient are quite different, as can be seen in Fig. 5.2 and Box 5.2. Fig. 5.2 indicates that there are effectively fewer options for uninsured patients and less continuity of care. Typically, individuals who are uninsured (who have neither private nor public insurance) will skip regular visits to a private office-based PCP since they will have to pay out-of-pocket for such care (DeVoe et al., 2015; Gulley, Rasch & Chan, 2011; Ng et al., 2012; Sommers et al., 2016; Tarazi, Green & Sabik, 2017; Wilper et al., 2009).

While some uninsured individuals may find a private-office primary care physician who offers care on a sliding-scale fee (Saloner et al., 2018), a more common source of primary care is community health centres where the services are on a sliding scale fee (Cole et al., 2018; DeVoe et al., 2015; Evans et al., 2015; Kirby & Sharma, 2017). The care patients receive at community health centres may include some testing and medication prescriptions. The centres provide only limited access to specialists and testing, and may find the need to refer the patient to a specialist or procedure or admit the patient to hospital (Ezeonwu, 2018; Hall, 2013; Handy et al., 2013; Makaroun et al., 2017; Timbie et al., 2019). It may be possible for an individual to receive specialist services if admitted to an emergency department (ED) or hospital, if specialists accept sliding scale reimbursement, or if there are voluntary specialist services in the community, such as surgeons donating their time to the indigent (Matula et al., 2009; Rhodes et al., 2013). Otherwise, the patient will have to cover the costs of out-patient specialty care out-of-pocket. If the individual is experiencing a true emergency the hospital will be forced to cover costs until the patient is stable enough to transfer (as required by the Emergency Medical Treatment and Active Labor Act (EMTALA); see Section 2.8).

FIG. 5.2 Healthcare pathways for uninsured patients



Notes: The short solid arrows pointing to the services along the periphery of the figure indicate the various ways a patient may enter the healthcare system depending upon their condition and ability to pay. The dark broken lines with arrows indicate the paths that can be taken once an individual enters the system. The light dotted lines are possible paths if the patient can afford the care

BOX 5.2 Example of an uninsured person's healthcare pathway

A pathway for an uninsured 60-year-old woman with breathing difficulties might be as follows. The woman is uninsured because she is too young to receive Medicare and she has a low-paying job that does not provide health insurance. She is as yet undiagnosed because she does not have a regular primary care physician. As her symptoms worsen she visits a community health centre where she receives tests and the diagnosis of COPD. The centre provides some medications for the disease but the medications do not last and she then goes without. Periodically, the woman returns to the centre for a check-up and more medications. After three years the condition worsens and one evening she feels unable to breathe. She goes to the ED, where she is found to have a serious form of pneumonia on top of the COPD. She is hospitalized for four days, two of which are in the ICU. She is discharged from the hospital still weak but she cannot afford to pay out-of-pocket for rehab or home care. If this individual remains uninsured and we follow her healthcare over time, we will find that it remains sporadic and incomplete. This inconsistent and inadequate attention to health problems contributes to a greater morbidity and mortality (Bittoni et al., 2015). If she develops other conditions, such as the ones that the insured individual described in Box 5.1 encountered, her situation will only worsen.

The uninsured may avoid necessary dental, eye and mental health care due to the OOP costs associated with that care (Shi, Lebrun & Tsai, 2010; Winkelman & Chang, 2018). They may also fail to start, miss or stop taking needed medications for the same reason (Fernandez-Lazaro et al., 2018; Gulley, Rasch & Chan, 2011; Shi, Lebrun & Tsai, 2010; Sommers et al., 2016). To alleviate the pharmaceutical access problem, state and federal governments and private organizations have set up programmes to make medications more affordable to those in need. Pharmaceutical companies sponsor patient assistance programmes (Hall, 2013), but little is known about how many patients are served and the application process is cumbersome (Choudhry et al., 2009; Felder et al., 2011).

For urgent and emergency care the uninsured tend to use urgent care centres and emergency departments (Evans et al., 2015). As mentioned, if an individual is experiencing a life-threatening emergency, a hospital must treat the individual. Therefore, a common way for uninsured individuals to receive hospital services is to present seriously ill to the hospital emergency department. However, the uninsured will not receive rehabilitation

following hospitalization, nor any long-term or palliative care unless they pay out-of-pocket.

These two categories of insured/uninsured are not as distinct as they appear. A number of individuals have insurance, but it may not always cover the services they need or they may not be able to find available providers. This can occur with both private insurance, which may have provider networks that are too 'narrow', or with public insurance, such as Medicaid, that reimburses providers at lower rates. We discuss these issues in further detail below. As a result, individuals who are 'underinsured' may take a pathway that more closely resembles the uninsured than the insured (Cole et al., 2018; Kielb, Rhyan & Lee, 2017). For example, Medicaid patients may find that community health centres are more accessible than regular physician's offices (DeVoe et al., 2015; Kirby & Sharma, 2017), but they may have difficulty paying for medications and other treatments, and obtaining specialty care. For example, 60% of CHCs report having difficulty obtaining new specialty care appointments for Medicaid patients (Timbie et al., 2019).

A closer scrutiny of the pathways above brings out additional issues. The first concerns the coordination of care. Since services have become more specialized over time, it has been increasingly difficult to coordinate and integrate those services. This is especially problematic in the patient with multiple morbidities; the patient may be seeing multiple specialists and may undergo testing and receive treatment and medications for several conditions (Bodenheimer, 2008; Miller et al., 2019).

Poor coordination of healthcare services can lead to 'wasteful duplication of diagnostic testing, perilous polypharmacy, and confusion about conflicting care plans' (Bodenheimer, 2008). It contributes to poorer quality of care, greater emergency department (ED) use and avoidable hospitalizations (Cheng, Chen & Hou, 2010; Frandsen et al., 2015). Several programmes are being implemented to improve care coordination in the United States. These include electronic referral systems and referral agreements between primary care providers and specialists, disease management programmes, the use of advanced practice registered nurses (APRNs), and improved hospital discharge planning (medication reconciliation, patient education and post-discharge follow-up) (Bodenheimer, 2008). Hospital-affiliated ACOs have also been found to make greater use of coordination strategies (Anderson & Chen, 2019).

The second issue with healthcare pathways is how well the services respect the individuality of the patient and include the patient and family as active partners in care. This 'patient-centred care' is an approach that 'meets the specific needs, values, and beliefs of patients' (McMillan et al., 2013, p. 568).

A care model that combines both care coordination and patient-centred care is the 'patient-centred medical home (PCMH)'. This primary care approach is based on comprehensive, long-term, person-focused coordinated care (Edwards et al., 2014). PCMHs use multidisciplinary teams and health information technology to manage and integrate care coordination and transitions (Edwards et al., 2014). The model has been endorsed by US primary care physicians and has spread across the United States over the past decade (Edwards et al., 2014). PCMHs are discussed in further in Section 5.3.3.

5.2 Public health

Public health focuses on promoting health at the population level through investigating and intervening in the environmental, social and behavioural factors in health and disease (Jacobson & Parmet, 2019). It deals with prevention and health promotion rather than treatment of disease and recovery of health, which is the domain of medical care. It attempts to influence social, economic, political and medical factors that affect health and illness (Jacobson & Permet, 2019; Shi & Singh, 2019). The three core functions of public health defined by the IOM are assessment, policy development and assurance (Salinsky, 2010). The 10 essential services that correspond to these core functions are listed in Box 5.3. (Salinsky, 2010).

5.2.1 *Organization of public health services*

Public health is promoted mostly through public agencies, primarily at the state level, but some private agencies also play a role. At the federal level, public health services are headed by the US Public Health Service (USPHS), a division of the HHS. The USPHS is comprised of eight agencies listed in Box 5.4 (US Department of Health and Human Services, nd).

BOX 5.3 Core public health functions and essential services

Core functions:	Essential Services
Assessment:	• Monitor health status to identify community health problems. • Diagnose and investigate health problems and health hazards in the community.
Policy development:	• Inform, educate and empower people about health issues. • Mobilize community partnerships to identify and solve health problems. • Develop policies and plans that support individual and community health efforts.
Assurance:	• Enforce laws and regulations that protect health and ensure safety. • Link people to needed personal health services and assure the provision of healthcare when otherwise unavailable. • Ensure a competent public health and personal healthcare workforce. • Evaluate effectiveness, accessibility and quality of personal and population-based health services. • Research for new insights and innovative solutions to health problems.

Source: Salinsky, 2010

The AHRQ, HRSA, NIH and Substance Abuse and Mental Health Services Administration (SAMHSA) are the chief federal agencies for funding health care programmes and research. The AHRQ funds research on quality, costs and administrative issues in health care, while the NIH funds biomedical and clinical research primarily. Although the AHRQ and NIH are considered to be part of the USPHS, in reality the bulk of their research is on medical, not public health, issues. The HRSA funds programmes and research on the indigent, uninsured, rural residents, other special need populations, and the health care workforce. Another major function of the HRSA is to collect data on the health care workforce. The HRSA's functions have more of a public health purpose in that they help assure adequate health care resources, yet as with the AHRQ and NIH

BOX 5.4 US public health service agencies

Agency for Healthcare Research and Quality (AHRQ)
Agency for Toxic Substances and Disease Registry (ATSDR)
Centers for Disease Control and Prevention (CDC)
Food and Drug Administration (FDA)
Health Resources and Services Administration (HRSA)
Indian Health Service (IHS)
National Institutes of Health (NIH)
Substance Abuse and Mental Health Services Administration (SAMHSA)

Source: US Department of Health and Human Services, nd.

most of these resources go into providing medical care. The SAMHSA funds programmes and conducts its own studies into the prevention and treatment of alcoholism, substance abuse and mental illness. The SAMHSA's funding is delivered mostly through block grants and contracts with state health agencies.

The Agency for Toxic Substances and Disease Registry (ATSDR) monitors and protects against exposure to hazardous wastes, and works to minimize ill-health effects of hazardous waste emergencies and pollution from hazardous wastes. The CDC is responsible for the surveillance, identification and prevention of disease and injury in the United States, and provides assistance to other countries and international health organizations regarding these health concerns. Major components of the CDC include identification and prevention of infectious and chronic diseases (including HIV/AIDS and sexually transmitted diseases (STDs)), injury prevention, immunization, health promotion, environmental health, occupational safety and health, emergency and terrorism preparedness, and cancer screening. The CDC also funds and collects data for public health research in these areas.

The FDA oversees the Federal Food, Drug, and Cosmetic Act, several related public health laws, and food safety (along with the US Department of Agriculture). Areas supervised include new medical devices, experimental drugs, biological products, tobacco products, cosmetics, food additives, food labels, domestic and imported foods (except for meat and poultry) and food given to livestock. The US Department of Agriculture is responsible for meat and poultry safety (more information on the FDA, CDC and other HHS agencies can be found in Sections 2.3 and 2.8).

The Indian Health Service (IHS) provides public health services to American Indians and Native Alaskans, primarily on Indian reservations and in Eskimo villages. More than half of all American Indians, however, do not live on reservations and are not eligible for these services. When resources are available, services include preventive, ambulatory and hospital care, community health, alcohol programmes and rehabilitative services.

In addition to these agencies, the USPHS also has four offices that coordinate and serve USPHS agencies, programmes and clients (US Department of Health and Human Services, nd). These are the Office of the Assistant Secretary of Health (ASH); the Office of the Secretary; Program Support Center (PSC); and the Office of the Assistant Secretary for Preparedness and Response (ASPR). The ASH leads and coordinates public health and science across the HHS. The Office of the Secretary oversees programmes and one quarter of the HHS budget. The PSC provides products and services to HHS clients and other federal agencies. The ASPR provides advisory resources on bioterrorism and other public health emergencies.

At the state level, all 50 states have state health agencies that carry out public health efforts. States legally have the greatest authority for carrying out public health. While influencing state and local practices, federal laws tend to give states the leeway to determine the scope and amount of services and to establish the vehicles for providing those services.

As a result, the organizational structure of state public health agencies and the services provided by those agencies vary significantly across the states, making general descriptions difficult (ASTHO, 2012). Public health functions can be the sole domain of one state agency or part of the function of an agency that is also in charge of social services, licensing and regulation of acute and long-term care, the administration of Medicaid or insurance regulation (Salinsky, 2010). Public health functions, such as the regulation and inspection of healthcare facilities, the licensure of health professionals and the control of disease vectors such as mosquitoes, can also be spread over more than one state agency or can be performed in partnership with private organizations. States also differ with regard to whether the relationship between state and local public health agencies is decentralized, centralized or a hybrid of the two. In more decentralized models, local public health agencies have greater administrative control.

Many public health functions are delegated to local public health agencies (usually called 'health departments') within that jurisdiction. Jurisdictions can be at the county, city, town or township level (Salinsky, 2010). In 2008

most local health departments (60%) were at the county level, 18% covered a city, town or township, 11% were joint city–county jurisdictions and 9% were multicounty (Salinsky, 2010).

5.2.2 *Public health services*

COMMUNICABLE DISEASE CONTROL

Control of communicable diseases is carried out by local and state health agencies in collaboration with the CDC (Salinsky, 2010). Local and state agencies conduct surveillance of communicable diseases, and collect and analyse the data. Both private and state labs analyse specimens. Examples of communicable diseases of public health concern for becoming epidemics or pandemics are meningitis, West Nile Virus, Hanta Virus, influenza strains such as H1N1, the plague and, most recently, the coronavirus. The CDC is notified of unusual or alarming outbreaks or trends. Outbreaks of communicable diseases, once reported to the CDC, are further investigated by this agency. Control and prevention measures are then implemented by the CDC in collaboration with the affected area(s). For communicable diseases that are endemic, such as STDs and tuberculosis, local public health departments offer both screening and treatment (see 'Health promotion and prevention services' below) (Salinsky, 2010).

ENVIRONMENTAL HAZARDS

Environmental (non-infectious, non-occupational) hazards are prevented, detected and corrected by federal, state and local public health agencies, or in some states by an environmental agency. At the federal level, the National Center for Environmental Health (NCEH) plans and directs an overall programme of environmental harm reduction (NCEH, 2019). Also, the ATSDR evaluates the risk of hazardous substances in the environment, identifies people at risk of exposure to hazardous substances, and prevents or minimizes the effects on health. The types of hazard typically controlled are air pollution, contaminated food and water, chemical spills, radon gas, mosquitoes and other disease vectors (Salinsky, 2010; NCEH, 2019).

EMERGENCY, DISASTER AND TERRORISM PREPAREDNESS

Efforts to prepare for emergencies, disasters and terrorism are led by the CDC and the HHS Office of the Assistant Secretary for Preparedness and Response, which publish protocols for action for state and local government agencies (Salinsky, 2010; CDC, 2019a). However, each local public health agency is responsible for developing a customized plan based on CDC protocols, and state governments play a key role by devoting resources to local preparedness planning (Salinsky, 2010). Preparedness and response efforts include surveillance, laboratory testing, outbreak investigation, and the treatment and quarantine of the population. Plans must have a coordinated emergency medical response. In the event of an incident, state and local agencies are responsible for implementing the plan in collaboration with the CDC.

PROMOTION OF OCCUPATIONAL HEALTH

Promoting of occupational health is carried out by the National Institute of Occupational Safety and Health (NIOSH), a part of the CDC, and the OSHA, a part of the US Department of Labor (NIOSH, 2018; OSHA, nd). The NIOSH funds research, investigates workplace safety and provides information, education and training in occupational safety and health, while the OSHA is responsible for developing and enforcing workplace safety and health regulations. State health agencies are also involved since they may be the first to be called regarding a safety issue. The NIOSH encourages employers and employees at all worksites to report possible safety violations. When a possible occupational hazard is reported, the NIOSH's health hazard evaluation programme investigates the claim. The NIOSH employs a research-to-practice philosophy, in which it encourages the translation of research findings, technologies and information into prevention practices and products that can be adopted in the workplace. The NIOSH also engages in prevention through its total worker health programme, which combines occupational safety with health promotion to prevent illness and injury. This combination of research, regulations, prevention and surveillance comprises the core occupational health functions of the US public health system.

SURVEILLANCE OF POPULATION HEALTH AND WELL-BEING

Surveillance involves the collection, processing and maintenance of data on the following population measures: vital statistics (e.g. births and deaths); demographic characteristics (age, sex, race, ethnicity, education, employment, income and residence); childhood immunizations; behavioural risk factors; incidence of cancer, trauma and occupational injuries; communicable, acute and chronic diseases; insurance coverage; and healthcare utilization and expenditures (CDC, 2019a). State agencies collect much of this data through provider reports, hospital discharge databases, registries and population surveys (Salinky, 2010). Federal agencies contributing to this surveillance include AHRQ, BLS, CMS, National Cancer Institute, SAMSHA and the US Census Bureau (CDC, 2019a). Private agencies that contribute data include various medical associations and the Dartmouth Institute. The data from these agencies are shared with the CDC, which additionally sponsors several surveys that collect data on ambulatory care, hospital inpatient care, home and hospice care, nursing home care, vital statistics, immunizations, nutrition and population health (CDC, 2019a). For example, the CDC's population health survey – the National Health Interview Survey (NHIS) – collects information on illnesses, injuries, activity limitation, chronic diseases, health insurance coverage and utilization of healthcare. US data are also compared internationally using OECD data. The CDC places much of this data, aggregated to the national level, into a publicly available (on the internet) annual report entitled *Health,* United States (CDC, 2019a).

HEALTH PROMOTION AND DISEASE PREVENTION SERVICES

These services are funded by federal and state governments while local health departments and community health centres provide the services. Most local public health departments provide screening and treatment for communicable diseases such as STDs and tuberculosis. Many also provide services to high-risk women and children (low income, special healthcare needs). Services may include perinatal home visits, well child clinics, developmental screening, and women, infants and children (WIC) nutrition counselling. Some other prevention services provided are: adult and childhood immunizations; screening for diabetes, cardiovascular and

other chronic diseases; smoking prevention and cessation; and prevention of HIV/AIDs, unintended pregnancy, obesity, inactivity, substance abuse, injuries and violence. Supported educational activities include media campaigns, outreach to high-risk groups and general population education. Some activities are conducted in partnership with NGOs, non-healthcare-related local government agencies or state health agencies. The amount of resources devoted to health promotion and disease prevention activities and the engagement of agencies vary by state and locality. Larger local health departments are more likely to provide a comprehensive set of services (Salinsky, 2010).

PUBLIC HEALTH SCREENING PROGRAMMES

There is no national public health screening programme in place in the United States, and screening programmes vary from state to state. State and local departments of health may screen for communicable diseases such as STDs and tuberculosis, newborn congenital diseases and chronic diseases such as diabetes and cardiovascular disease. Screening programmes are also available in community health centres, doctors' offices and retail healthcare settings (shopping malls, general stores, etc.). Outreach to the most vulnerable populations is always an issue, however. Many other diseases are screened in the United States (for example, breast and colon cancer) but whether these are offered to the individual patient is up to the discretion of the primary care provider and cannot be considered part of a public health effort except to the extent that there is public health education regarding the need to be screened.

OTHER SERVICES

Services funded or directly provided by state government include mental, correctional and child health services. Some state governments engage in the direct provision of mental and correctional health services, while most contract with private agencies to provide the services. Most states directly provide services for children with special health needs.

LICENSING, REGULATION AND PLANNING OF HEALTHCARE FACILITIES AND WORKFORCE

These functions are generally under the jurisdiction of state and local public health agencies. These agencies inspect and license healthcare facilities. State agencies license healthcare professionals and certify the non-professional healthcare workforce (see also Section 4.2.7). State agencies may also measure the performance of healthcare providers and facilities, publish quality report cards based on those measures and engage in other activities to improve the quality of healthcare services. Other organizations that measure and publish quality data on providers are federal agencies such as the CMS (through its Hospital Compare and other reports) and the AHRQ (through its National Health Care Quality and Disparities Report), and numerous private agencies such as the NCQA. Some private agencies, such as the Joint Commission, monitor quality but do not publish results. Most state health departments also inspect and license food-processing facilities, solid waste removal services and other health-related facilities (see Sections 2.5, 2.6 and 2.8 for more information).

5.2.3 *Accessibility, adequacy and quality of public health services*

For a number of years US public health services at the federal, state and local levels have been underfunded, resources at the local level are inadequate, the system is disorganized and services tend to be driven by immediate concerns and political expediency rather than a long-term vision (IOM, 2012; Jacobson & Parmet, 2018; Salinsky, 2010). The local public health workforce has declined over the last 30 years, and between just 2008 and 2010 it declined by approximately 19% (Jacobson & Parmet, 2018). Funding and resource availability have also been noted to vary substantially by locality, so that some agencies have sufficient resources while others, often the poorest communities, are significantly lacking (IOM, 2012).

Public health improvement initiatives began in the 1990s in response to the 1988 IOM recommendations and the *Healthy People 2000* objective of having 90% of the population served by effective public health services by the year 2000 (Scutchfield, Mays & Lurie, 2009). In response to the Public Health Improvement Act enacted by Congress in 2000, overall funding increased for several years and the coordination, planning and delivery of

services improved. These developments improved the access to and quality of public health services. But budget cuts in state funding, which began before the 2008 recession, and have deepened since, threaten the progress made to date (ASTHO, 2014; Krisberg, 2017). The ACA established a Prevention and Public Health Fund dedicated to public health and disease prevention, but it too is undergoing cuts (APHA, 2019; Jacobson & Parmet, 2018).

5.3 Outpatient services: primary care

5.3.1 *Definition and services*

Primary care is defined as 'the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community' (IOM, 1994, p. 15). The 'four pillars' of primary care are: (1) first contact with the healthcare system; (2) continuity of care over time; (3) concern for the whole patient rather than a disease or part of the patient; and (4) coordination of care (Starfield, 1998).

Primary care practitioners are generalists who coordinate patients' care and see patients over an extended period of time. In the United States several specialties have been subsumed under the primary care umbrella since providers in these fields may be the primary provider for the patient and may see the patient over a period of time. The specialty fields of primary care are family medicine, internal medicine, paediatrics, obstetrics and gynaecology (Bodenheimer & Pham, 2010). A practitioner of family medicine cares for all family members, regardless of age or sex, throughout their lifetime. A practitioner of internal medicine, or an internist, is concerned with the prevention, diagnosis and treatment of adult diseases. A practitioner of paediatrics is responsible for the overall care of children up to the age of 18 years. A practitioner of obstetrics cares for pregnant women, while a practitioner of gynaecology deals with female reproductive issues.

Primary care practitioners include physicians (MDs or DOs), NPs, PAs and nurse-midwives. Visits to primary care physicians comprised around 56% of the nearly 900 million visits to physicians in the United States in 2016 (NAMCS, 2016). Of the total number of physician visits, those to general

and family practice physicians were 23%, those to paediatricians 15%, to internal medicine 9% and to obstetricians 8%.

The proportion of physician visits for primary care has declined since 1980 when it was 66.2% of all physician visits (NCHS, 2016, Table 77). This is congruent with a progressive decline in the proportion of primary care physicians (see Chapter 4). However, the decline in the proportion of primary care physicians and physician visits does not represent an absolute decrease in primary care services, since the primary care physician to population ratio has remained stable (see Section 4.2.2), and there has been a substantial growth in other primary care providers, such as NPs and PAs (see Section 4.2.2). For example, among individuals with employer-sponsored insurance the number of visits to PCPs declined 18% between 2012 and 2016 while visits to NPs and PAs increased 129% (HCCI, 2018).

There are several venues for the delivery of primary care. A major one is the private clinic of physicians. Another primary care venue is the public or non-profit community health centre, which provides access to primary care for low-income, uninsured and minority populations (Bodenheimer & Pham, 2010). Other government settings include clinics for the military (such as those run by the VHA), prisons, the IHS and centres for migrants and the homeless (Bodenheimer & Pham, 2010). Urban public and teaching hospitals may also have outpatient clinics for primary care services, typically serving underserved populations (Bodenheimer & Pham, 2010). A small number of integrated care systems, such as Kaiser Permanente and Geisinger Health System, provide primary care as part of their integrated systems which cover primary, specialty, emergency, hospital and other care (Bodenheimer & Pham, 2010). Finally, workplace wellness programmes and retail clinics are providing some primary care services by providing screening, health promotion and basic prevention services (Baicker, Cutler & Song, 2010; RAND, 2010).

Primary care practices in private clinics provide care to patients who are insured or who can afford substantial OOP expenses. Patients receive all types of primary care services, including screening, diagnosis, treatment for chronic and acute conditions, and health promotion and education. However, in a 2007 survey only around a third of the physicians engaged in health promotion practices such as nutrition and weight loss counselling (McMenamin et al., 2010). Some physicians are using smart phone apps for health promotion, and studies have found improved health outcomes in patients using these products compared to those who do not (Lee et al., 2018).

Most physician private practices are small: in 2018, 18% of physicians were in solo practice and an estimated 38% were in practices with just two to ten physicians (Hawkins, 2018). These percentages are slightly lower than those for 2014 and 2016, indicating that the size of offices is getting larger (Hawkins, 2018). The number of independent or partnership practices is also decreasing sharply. In 2018 only 31% of physicians were in these categories, down from 48.5% in 2012 (Hawkins, 2018). Physicians' offices are becoming larger and more integrated because these types of practices are cost-effective and provide financial security and hospitals are buying up and consolidating primary care practices (Hawkins, 2018). In contrast to independent or partnership practices, physicians are increasingly employed by a hospital or medical group (from 44% in 2012 to 58% in 2018) (Hawkins, 2018).

In 2016 close to 26 million people in the United States received their primary care in federally funded community health centres (CHCs) in 14,000 urban and rural areas (Rosenbaum et al., 2018). In addition, 58 state and local-funded CHCs cared for nearly 740 000 patients (Rosenbaum et al., 2018).

Individuals seen by CHCs tend to be at or below the federal poverty level (Rosenbaum et al., 2018). Nearly 60% are racial or ethnic minorities, 23% are uninsured and 49% receive Medicaid (Rosenbaum et al., 2018). Care is provided at no or little cost to the individual according to the individual's ability to pay (Rosenbaum et al., 2018). Consequently, these centres are a major part of the 'healthcare safety-net' for people who are underinsured or uninsured.

CHCs receive funding from federal, state and local sources, Medicaid, Medicare, CHIP, private insurance and patient fees (Rosenbaum et al., 2018). Medicaid is the largest source of revenue (Rosenbaum et al., 2018). Most CHCs are federally qualified and funded. To qualify, public or private non-profit CHCs must serve an underserved population, offer a sliding scale fee, provide comprehensive services and engage in quality improvement (HRSA, 2012). Other CHCs meet the CMS definition of a centre, but do not receive federal funding.

CHCs provide comprehensive, coordinated primary care using a team approach (Everett, Morgan & Jackson, 2016). Physicians constitute about 60% of the medical practitioners, while NPs, PAs and nurse-midwives together constitute the other 40% (NACHC, 2019). The CHCs may also have a team of dentists, dental hygienists and dental assistants. Pharmacists,

case managers, transportation, patient education, interpretation staff and community health workers may also be utilized (NACHC, 2019).

Patients going to CHCs may receive a range of primary care services, such as health education and screening, chronic and acute condition care, vision care, pre- and post-surgery care, medication prescription and specialty referral services (Rosenbaum et al., 2018). Two growing areas of care are dental and mental health, which are provided by over 80% of CHCs (Rosenbaum et al., 2018). In 2016 mental and substance abuse care accounted for over 10% of patient visits (Rosenbaum et al., 2018). In addition, 6% of patient visits are for enabling care – i.e. assisting patients to gain access to other care (Rosenbaum et al. 2018). Studies have shown that CHCs provide as good or better quality of care compared with other primary care settings (NACHC, 2019).

Retail clinics, located in pharmacies, general stores and department stores, have emerged as alternative sites for primary care (Hoff & Prout, 2019). These clinics are mostly operated by pharmacy chains, such as CVS Health and Walgreens, and department stores such as Target and Walmart, where the clinics are also located, but hospitals and large healthcare systems are also beginning to offer healthcare at such sites (Hoff & Prout, 2019). Companies known more for their technology services, like Amazon and Apple, are also planning to enter the retail clinic market.

A positive feature of retail clinics is that they have walk-in availability, extended hours compared to physicians' offices and convenient points of access (Hoff & Prout, 2019). They tend to be staffed by non-physician practitioners, such as NPs or PAs, and they treat a limited number of conditions and needs, such as skin conditions, sore throats, pregnancy testing, infections, diabetes screening and immunizations (Hoff & Prout, 2019).

According to a review of studies, the quality of care at retail clinics appears to be similar or better than that at other sites, although the evidence is minimal and there are some contrary findings (Hoff & Prout, 2019). One noted concern was with continuity of care, which was found to be lower in retail clinics (Hoff & Prout, 2019; Rohrer et al., 2013). In response to that concern, some experts point to the need for integration between the clinics and physician groups or hospital chains (Pollack, Gidengil & Mehrotra, 2010). Another concern is whether the clinics do much to improve access to care for the underserved. Since most clinics are outside medically underserved areas, and require full payment for services, they do not seem

to be improving access for that population (RAND, 2010). Most studies also show lower or similar costs in retail clinics, although some studies show that total prescription costs and other healthcare spending are higher after a retail clinic visit (Hoff & Prout, 2019).

Urgent care centres may also be used for primary care. This may occur when an individual does not have a primary care physician or for the convenience of the location and walk-in environment. Like retail clinics these services do not provide continuity of care. We discuss these services in Section 5.5.

5.3.2 *Accessibility, adequacy and quality of primary care*

Access to primary care requires that patients have the ability to pay for care, adequate transportation to care and the health literacy to demand and use the care, among other patient factors. It also requires that the supply, distribution and time of providers is adequate (Lazar & Davenport, 2018). Patient inability to pay for care is one of the chief barriers to primary care in the United States (see Chapter 3). Nearly 14% of adults aged 18–64 are uninsured and 45% are underinsured and face high OOP expenses (Collins, Bhupal & Doty, 2019; Witters, 2019). The underinsured include those covered by Medicaid but who may experience problems accessing primary care due to their inability to find a private physician who accepts Medicaid patients, and OOP expenses associated with safety-net providers (Collins, Bhupal & Doty, 2019; Lazar & Davenport, 2018). Many with private insurance also have deductibles or co-payments that are difficult to afford. While healthcare safety-net facilities (CHCs, migrant centres, urban teaching hospital clinics and others) provide care for low fees, the services may not be nearby or individuals may not be aware of them. Individuals may be able to pay practitioner fees but cannot afford medication or other primary care treatments. So despite the safety-net, inability to pay for primary care remains a barrier to many. Elderly individuals who receive Medicare but cannot afford supplemental insurance are not counted in the uninsured numbers above, but they also face high OOP expenses.

Patients must also have adequate transportation to and from primary care facilities in order to obtain access to primary care (Douthit et al., 2015; Lazar & Davenport, 2018). Individuals may not have private transportation

and may need mass transportation with stops close to the provider facility. Some individuals cannot walk far and need car or van transportation. Patients in rural areas may find it impossible to get to primary care facilities that are some distance away.

Lack of education, language difficulties and illiteracy have also been identified as barriers to outpatient physician services (Lazar & Davenport, 2018). Lack of education affects awareness of healthcare needs and resources. Language difficulty and illiteracy affect an individual's ability to seek proper care, understand what providers tell them, make informed and shared decisions and follow care instructions.

On the provider side, there may not be enough primary care practitioners who are able or willing to provide care, or who can provide care in a timely way (Candon et al., 2018; Lazar & Davenport, 2018). Prior to implementation of the ACA the proportion of people looking for a primary care physician but having difficulty finding one had been increasing (Bodenheimer & Pham, 2010). As Section 4.2.2 reports, between 2013 and 2016 wait times for new patients in primary care were estimated to be over a week in most states, to over 30 days in some states (Rhodes et al., 2014; Polsky et al., 2017).

There are several reasons for these provider-side primary care access problems. First, there is a primary care physician shortage, detailed in Section 4.2.2. As a result, many primary care physicians carry heavy patient workloads (Bodenheimer & Pham, 2010). In addition, they have excessive administrative requirements, and work in inefficient workplaces (Bodenheimer & Pham, 2010). Geographical maldistribution of primary care providers contributes to shortages in rural and disadvantaged urban areas (see also Section 4.2.2). Reimbursement rates, especially Medicaid, may be another source of insufficient primary care physician supply for patients with that type of coverage. Medicaid fees have been found to be inversely related to PCP availability (Candon et al., 2018).

With implementation of the ACA there were concerns that the increase in insured patients would create additional strain on an already burdened primary care system. Although one study found relatively stable wait times and appointment availability after ACA insurance expansions (Rhodes et al., 2017), another reported low-income patients having increased difficulty in obtaining primary care visits in Medicaid expansion states (Miller & Wherry, 2017). It is possible that increased utilization of advance practice RNs and physician assistants has enabled this ACA expansion of access (Leszinsky & Candon, 2019)

The patient and practitioner factors affecting access to primary care are among several factors that may negatively affect the quality of primary care. In a survey of primary care and specialty physicians, factors contributing to lower quality of care were insurance company rejection of practitioner decisions, patient payment issues, patient noncompliance and inadequate time with the patients (Deshpande & DeMello, 2011). Primary care physicians were more likely than specialty physicians to report problems due to inadequate time with patients.

5.3.3 *Initiatives to improve primary care*

While socioeconomic status, social capital and racial and ethnic inequality are strong determinants of health, access to primary health care is also important (Marshall, Cornwell & Collins, 2018; Webber et al., 2018). Studies show that access to quality primary care is important for good health outcomes, equitable healthcare and lower health system expenditures (Basu et al., 2019; Petterson et al., 2018; Pilkerton et al., 2017). Primary care may help counteract the negative effects of poverty on health (Petterson et al., 2018; Shi, 2019).

Studies indicate that access to primary care also reduces healthcare utilization and costs. Individuals with access to primary care are more likely to receive preventive care and treatment before more severe problems develop and they have fewer emergency department visits and hospital admissions (Petterson et al., 2018; Shi, 2012).

Initiatives to improve primary care include expanding access to healthcare, increasing the primary care provider supply and developing greater efficiencies in the delivery of primary care. Expanding access to healthcare is one of the chief goals of the ACA (see Chapter 6). The ACA is improving access by providing subsidies for low-income persons to purchase health insurance, supporting Medicaid expansion in a number of states and increasing funding of community health centres.

To increase primary care provider supply and reduce maldistributions, medical school admissions and curricula are putting a greater focus on primary and rural practices, and loan-repayment programmes that use incentives to practise in areas of need after graduation are being employed (Parlier et al., 2018; Roy et al., 2015; Wheat et al., 2018). Another method

for increasing primary care provider supply is to rely more on non-physician primary care providers such as nurse practitioners and physician assistants (Barnes et al., 2018).

To increase efficiencies in primary care delivery two models of care are being employed: patient centred medical homes (PCMHs) and accountable care organizations (ACOs). PCMHs have a number of characteristics that should positively impact the delivery of primary care: (1) each patient has an ongoing relationship with a primary care provider; (2) the primary care provider directs the medical team; (3) the primary care provider has responsibility for caring for all the patient's health needs through all stages of the patient's life; (4) patient care is coordinated across all healthcare settings; (5) services are safe, evidence-based and of high quality, with patients actively participating in decision-making; (6) patients have access to care; (7) payment systems recognize the added value of PCMHs (Rittenhouse et al., 2011). The Affordable Care Act has promoted PCMHs by paying state Medicaid programmes to shift patients into medical homes, funding new PCMH models of care and supporting the information technology needed for care coordination in PCMHs (Hoff, Weller & Depuccio, 2012).

Implementation of the PCMH model has expanded throughout all 50 states in the United States (PCPCC, 2019). PCMHs are located in state-wide, county or local level organizations. Payers can be public, private or multi-payer sources. Some state legislatures have funded the efforts. Around 20 states have extensive networks of PCMHs (PCPCC, 2019).

Evaluation of the PCMH model indicates better quality, lower utilization and lower costs in PCMHs (Christenson et al., 2013; Hoff, Weller & Depuccio, 2012). A less strong relationship is found between PCMHs and patient and family experiences (Hoff, Weller & Depuccio, 2012; Lebrun-Harris et al., 2013; Marsteller et al., 2014).

ACOs are groups of providers in an area – including primary and specialty care physicians, hospitals and others – who coordinate and integrate their care for patients (CMS, 2012b). The purpose of ACOs is to ensure that patients receive the right care at the right time without duplication of services and medical errors. ACOs differ from PCMHs in that payment is tied to the performance of the ACO, thus conferring financial risk for members, whereas with PCMHs there is no direct relationship between payment and membership. When an ACO succeeds both in efficiency and high quality, it will share in the savings.

ACOs were initiated by the ACA and were first implemented in the Medicare shared savings programme, but the ACA also supports pilot programmes to extend the model to private payers and Medicaid. In 2016 there were 838 active ACOs across all states in the United States, caring for over 28.3 million people (Muhlestein & McClellan, 2016). Of these, 405 were part of the Medicare shared-risk programme (Herrel et al., 2017).

Providers working in ACOs report benefits of improved patient access and experience, care coordination and communication between providers, but also added bureaucratic requirements, referral restrictions and financial risks (Berenson, Burton & McGrath, 2016; Hacker et al., 2014). As mentioned in Box 3.3, there is as yet little evidence for significant cost savings.

5.4 Outpatient services: specialty care

5.4.1 *Definition and services*

Specialty care focuses on one part, disease or organ system of the individual. It is often a short-term or intermittent relationship. It does not coordinate the overall care of the individual and is often received after care is sought at the primary care level. Since each specialist is caring for a different aspect of the individual, specialty care is one of the aspects of healthcare that primary care seeks to interface and coordinate with. However, fragmentation of care remains a major issue in US healthcare (Vimalananda et al., 2018).

Specialty care practitioners have specific education and training in the specialty area. They treat their patients only for problems or interventions in that area of expertise (see also Section 4.2.1). Specialists practise in private practices or in hospital EDs or other diagnostic or treatment departments or facilities. As with primary care, physicians are the main practitioners of specialty care. However, APRNs and PAs also practise in specialty areas. Physician specialty areas include allergy/immunology, anaesthesia, cardiology, cardiac surgery, dermatology, emergency medicine, general surgery, gerontology, neurology, neurosurgery, oncology, ophthalmology, orthopaedics, plastic surgery, pulmonology, rheumatology, radiology, psychiatry and urology (ABMS, 2018). Physician assistant specialty practices can be found in most of the physician specialty areas (NCCPA, 2018).

APRNs specialize in anaesthesia (nurse anaesthetist) or in clinical nurse specialty areas such as acute care, community health, dermatology, family health, gerontology, paediatrics, psychiatric and mental health, and school nursing. In some of these areas the APRN fills a primary care role (e.g. family health, community health, paediatrics) (*Nurse Journal*, 2019).

Visits to a specialty care physician comprised 44% of visits to physicians in the United States in 2016 (NAMCS, 2016). This represents an increase since 1980 when the proportion was 34% of all physician visits. The increase corresponds to a substantial growth in the specialist-to-population ratio from 1965 to 1992 of 120% (Bodenheimer & Pham, 2010), and from 1992 to 2015 of 52% (CDC, 2017a).

5.4.2 *Accessibility, adequacy and quality of specialty care*

Many of the issues with access to primary care, such as payment issues, distribution of providers and coordination of care, are also a concern with specialty care (Ezeonwu, 2018). Patient ability to pay and payer issues are an even greater problem with specialty care than with primary care. One reason for this is that a primary care safety-net exists for underinsured and uninsured individuals, but the safety-net does not cover specialty care to the same extent (see Section 5.1). Safety-net organizations, such as CHCs and urban hospital clinics, often do not have funding to offer specialty services and must refer these services to practitioners outside the organization (Hall, 2013; Handy et al., 2013). When an underinsured or uninsured patient is referred to a specialist outside the safety-net, the patient may not be able to pay the specialist the expected fee or the specialist may not accept their insurance (such as Medicaid) (Bisgaier, Rhodes & Polsky, 2014; Chaudhry et al., 2013; Ezeonwu, 2018; Rhodes et al., 2013). In 2014 nearly half of specialist providers participating in Medicaid managed care plans did not have appointments available for enrollees, and of those who did, wait times were longer than one month for 34% of appointments (Makaroun et al., 2017). In a 2019 study, new patients with Medicaid were less likely to be accepted by both primary care and specialist physicians than those with Medicare or private insurance (Holgash & Heberlein, 2019). Higher Medicaid payment by some states was associated with greater acceptance of patients.

On top of payment-related issues with specialty care, there are also significant geographical maldistributions of specialists (Bellinger et al., 2010; Sequist, 2011). In many rural and underserved communities, access to specialty care is very limited (Sequist, 2011). It is difficult to recruit specialists to work in remote settings 'where resources are scarce, opportunities to interact with specialist colleagues are limited, and the clinical caseload may not justify the presence of a full-time subspecialist' (Sequist et al., 2011, p. 2258). Since low-income patients have difficulties with adequate transportation to specialists (Zuckerman et al., 2013), the reduced density of specialists in rural areas adds to this access burden.

Assessing the quality of outpatient specialty care is difficult at this time. Health plan quality measures such as HEDIS and Consumer Assessment of Health Plan Survey (CAHPS) are applied across all types of practices without distinguishing the practice type. Furthermore, performance is reported on an individual provider and health plan basis and there are no national or state summaries of HEDIS or CAHPS results. There is not a consensus on the expected role of specialists or consistent standards by which to measure specialist performance (Forrest, 2009).

Coordinating primary and specialty care is a growing issue in the United States, where the number of specialty referrals increased from 41 million in 1999 to 105 million in 2009 (Vimalananda et al., 2018). In 2007 a typical Medicare beneficiary saw two primary care physicians and five specialists a year (Bodenheimer, 2008). Patients with multiple conditions could see up to 16 physicians a year (Bodenheimer, 2008). A large number of referrals to specialists is associated with healthcare fragmentation across providers, which contributes to overtreatment, undertreatment, conflicting treatment, polypharmacy, duplicate tests, medication errors and patient confusion (Frandsen et al., 2015; Vimalananda et al., 2018).

5.4.3 *Initiatives to improve specialty care*

Areas in which specialty care needs to be strengthened are in the ability of the underinsured and uninsured to pay for care, the willingness of specialty practitioners to care for them, the distribution of specialty practitioners and care coordination between primary and specialty care. Until around 2017 the ACA increased the number of people with public or private health

insurance, which gave them the ability to access specialist care, and also increased the number of specialists willing to treat them. The ACA has also provided greater funding to safety-net organizations so that they can contract with more specialty practitioners. However, since 2017 there has been an increase in uninsured.

Regarding the geographic maldistribution of specialists, although the federal government has supported scholarship and loan repayment programmes under the National Health Service Corps, these have been for primary care physicians. We are not aware of federal programmes addressing the challenges of low specialty density in rural areas.

Care coordination is a key element of both PCMHs and ACOs (see Sections 5.1 and 5.3). Sections 5.1 and 5.3 of this chapter address initiatives to expand these models across the United States. Care coordination has also been noted to improve under the chronic care management (CCM) programme initiated by Medicare in 2015 (O'Malley et al., 2017; Williams et al., 2019). The programme reimburses providers for CCM activities that take place outside of office visits, thereby encouraging more provider attention to care continuity and coordination.

5.5 Other outpatient services: ambulatory surgical, emergency and urgent care

5.5.1 *Ambulatory surgical care*

Improvements in surgical equipment, techniques and anaesthesia have led to more and more surgeries being performed on an outpatient basis in the United States. Compared to inpatient surgery, outpatient surgery has the advantage of convenient hours and locations, a lower risk of infection, and recovery from surgery at home (Plotzke & Courtemanche, 2011). The disadvantage is that reduced professional oversight during the recovery period can lead to complications.

Ambulatory surgery can be performed in either hospital day surgery departments or free-standing ambulatory surgical centres (ASCs) (Munnich & Parente, 2014). In 2014, 66% of all surgeries were in the outpatient (or ambulatory) setting (Rechtoris, 2017). This was up significantly from

1981, when outpatient surgeries were only 19% of all surgeries (Munnich & Parente, 2014). Ambulatory surgeries performed in hospitals were 58% of all hospital surgeries (Steiner et al., 2018).

Common surgeries and procedures performed in the ambulatory setting include those for back problems, cataracts, cancers, colonoscopy, diverticuli, inguinal hernia repair, gallstones and many orthopaedic problems (Cullen, Hall & Golosinskiy, 2009). Surgeries not done on an outpatient basis are those with high risk, of long duration or with serious physical or mental limitations for the patient during recovery. An example is open-heart surgery.

More serious surgeries are being performed on an outpatient basis as improvements in drugs and techniques reduce the surgical time, the invasiveness of the procedure and the length of the recovery period. Knee replacement is an example of a complex surgery that used to take several hours to perform, was extremely invasive and required a long, supervised physical recovery period, but that is now transitioning to an outpatient procedure (Press, 2009). Even hip replacements are starting to be performed on an outpatient basis (Cluett, 2019).

Compared to hospital-based surgical centres, ASCs are perceived to be more conveniently located and to have better scheduling for both physician and patient, greater physician and patient satisfaction, similar quality and lower costs (Munnich & Parente, 2014; Plotzke & Courtemanche, 2011). There is some evidence that ASCs have lower costs (Munnich & Parente, 2019) and similar health outcomes such as mortality rates (Chukmaitov et al., 2008; Hollenbeck et al., 2015). Disadvantages of ASCs include physician self-referral patterns and a concern that ASCs serve the less sick, more profitable patients, leaving the sicker, less profitable patients in hospital-based centres (Hollenbeck et al., 2010; Koenig & Gu, 2013; Plotzke & Courtemanche, 2011).

5.5.2 *Emergency department care*

In 2016 Americans paid on average 0.46 visits per person to a hospital ED (CDC, 2016), a rate that has grown since 1997 when they were 0.35 per person (Tang et al., 2010). Of the 2016 visits, 0.6% were classified as immediate (the person should be seen immediately), 8.1% as emergent (within 15 minutes), 32.4% as urgent (within an hour), 24.5% as semi-urgent

(within 2 hours), 4.3% as non-urgent (within 24 hours), and 30% as no triage or unknown (CDC, 2016). Principal reasons for the visits included gastrointestinal pain and spasm, chest pain, fever, cough, headache, back symptoms, non-specific pain, shortness of breath, accidents, vomiting and other reasons (CDC, 2016). The median waiting time to see a physician, APRN or PA was 17 minutes. Most patients spent 2 to 4 hours in the ED.

EDs are a major part of the US healthcare safety-net (Mortensen, 2014; Rhodes et al., 2013). EDs in hospitals that receive payment from Medicare are required by the EMTALA to provide care to anyone needing emergency treatment. This allows underinsured and uninsured persons access to the ED for emergency conditions. Hospitals must care for the individuals until they are stable, which could include inpatient admission and surgery. Legally, individuals are responsible for paying for care not covered by insurance but they may be unable to do so and the hospital may write off the payment as 'charity care' or 'bad debt', two accounting terms for 'uncompensated care'. Hospitals make up for some of the revenue loss through Medicare funds earmarked for safety-net care and through higher charges to other payer groups.

EDs tend to be overused for non-urgent problems and for serious problems that could have been prevented with better primary and specialty care (Adams, 2013; Kangovi et al., 2013). When patients do not have regular or readily accessible primary care, they may go to the ED to seek primary care services (Kangovi et al., 2013; Morley et al., 2018; Rhodes et al., 2013). They may also wait until they are seriously ill and then appear in an ED. Uninsured and underinsured patients who have difficulties obtaining access to specialist outpatient services also seek care in EDs for specialist services (Nourazari et al., 2016). EDs are also used for urgent, but not emergent, problems that could be seen in urgent care centres (see next section) (Borkowski, 2012).

EDs in the United States have struggled with crowding, boarding (holding patients in the ED after they have been admitted) and delays in care (Morley et al., 2018; Rabin et al., 2012). The overuse of EDs for conditions that could be seen in a non-emergency setting is one contributor to these problems (Rhodes et al., 2013; Morley et al., 2018). Another is lack of ED staff nurses (Morley et al., 2018). Finally, inadequate inpatient capacity (beds and staffing) contributes to these problems, particularly the issue of boarding, by bottlenecking admitted patients needing to be placed in a hospital bed (Morley et al., 2018). These problems are associated with higher morbidity, such as prolonged illness and infection, and mortality (Rabin et al., 2012).

According to a review of studies and a policy analysis, ED access and quality can be improved by reducing the number of unnecessary visits (input), improving patient throughput, and reducing impediments to output (Morley et al., 2018; Rabin et al., 2012). Unnecessary visits can be reduced by improving access to outpatient primary and specialty care, increasing outpatient physician hours and providing alternative places to go for urgent care (see the following section) (Borkowski, 2012; Morley et al., 2018). Throughput changes that have been implemented include instituting a fast-track system that sorts non-urgent patients into a separate track for care, increasing the numbers of beds and nursing staff in the ED, and speeding up testing (Morely et al., 2018). Policies to improve output have included increasing the capacity of inpatient beds, particularly in ICUs, increasing efficiencies in inpatient testing and procedures, and developing alternative admission units (Morley et al., 2018).

5.5.3 *Urgent care*

Urgent care is provided outside the ED setting in urgent care centres (UCCs) that provide care on a walk-in basis, have extended hours into the evening Monday to Friday and at least one day over the weekend, and have on-site laboratories and radiology (ACEP, 2017; Le & Hsia, 2016). The scope of services in these centres is broader than those in many primary care offices or retail clinics and falls somewhere between that of a primary care practitioner's office and an ED (ACEP, 2017; Le & Hsia, 2016). Services focus on acute episodic care, and include care for minor illnesses and emergencies such as upper respiratory infections, urinary tract infections, backache, sprains, strains, lacerations, burns and minor fractures (Corwin, Parker & Brown, 2016; Stoimenoff & Dunn, 2018). Medical care is typically performed by primary care physicians, APRNs and PAs (ACEP, 2017; Le & Hsia, 2016).

UCCs have expanded rapidly over the past few years (by around 400–500 new centres per year) (Stoimenoff & Dunn, 2018). This expansion has been in response to difficulties in seeing primary care practitioners on an urgent basis and after hours, high ED costs and long ED waiting times (Stoimenoff & Dunn, 2018; Villasenor & Krouse, 2016). The ability to get same-day test results and medications also make them popular. Some individuals (around 30–40% of UCC admissions) use UCCs because they do not have a regular source of primary care (Stoimenoff & Dunn, 2018). Studies have shown

that areas that have more urgent care alternatives to EDs have lower ED use for low acuity diagnoses (Llovera et al., 2019).

In 2017 there were 7639 UCCs located mainly in urban areas with higher income levels and higher levels of private insurance (Stoimenoff & Dunn, 2018). The Urgent Care Association estimates that in 2013 around 18% of all primary care visits were to UCCs (Stoimenoff & Dunn, 2018). Although early UCCs were mostly physician-owned, by 2014 physician ownership had dropped to 40% and hospital ownership increased to 37% (Stoimenoff & Dunn, 2018). Insurance companies, pharmacies and other non-profit or for-profit corporate interests own the rest and have also partnered with physician and hospital owners (Stoimenoff & Dunn, 2018). Much of the ownership structure, especially corporate, is multi-site.

UCCs have access and continuity of care issues that are similar to those of retail clinics. An individual must have insurance or pay out-of-pocket for care, and it is not clear whether centres are conveniently located for indigent populations. Most UCCs attempt to promote continuity of care despite their episodic nature. Centres communicate with the patient's primary care physician if they have one, and transfer records to the physician (Stoimenoff & Dunn, 2018). However, continuity of care requires that patients comply with referrals and that physicians follow up when notified by the UCC. Lack of insurance or other factors may cause the patient to fail to follow up with the referral, while physician overwork may contribute to poor follow-up on their part. Therefore, concerns remain that UCCs may disrupt continuity of care (Villasenor & Krouse, 2016).

The quality and costs of care in UCCs have not been examined to any extent. Of studies that have been conducted, other than an issue of higher antibiotic overuse in UCCs (Palms et al., 2018), no major issues with quality have emerged (Weinick, Bristol & DesRoches, 2009). One study estimated that 13.7–27.1% of all current ED visits could safely take place at retail clinics or UCCs (Weinick, Burns & Mehrotra, 2010). This would lower patients' waiting times in EDs and save on the extra cost of ED care. One study examining costs found UCCs to have lower costs than both free-standing and hospital-based EDs (Ho et al., 2017).

5.6 Acute inpatient care

5.6.1 *Definition, classification and utilization*

Individuals who are acutely ill and need to have round-the-clock nursing care require inpatient care provided in hospitals. Some of the most common reasons for hospitalization include asthma, bronchitis, chronic obstructive pulmonary disease (COPD), pneumonia, appendicitis, gallstones, injury, fracture, cancer, childbirth, diabetes, mental health issues, heart attack, heart failure, arrhythmias, hypertension and stroke (NCHS, 2014). Several of these conditions and many others require surgical intervention. Several of them, such as heart failure, heart attack and arrhythmias, may require care in an ICU.

Hospitals may be classified by type of service, ownership, size (in terms of number of beds) and length of stay. The AHA uses a typology of hospital classifications that combines these classifications. AHA designates, firstly, whether the hospital is federal or non-federal, then whether the non-federal hospital is community or non-community, and then lists some of the types of community hospital based on the services provided (NCHS, 2017).

Federal hospitals are those operated by the federal government and include hospitals in the VA and IHS. Non-federal hospitals are divided into community and non-community hospitals. Community hospitals are non-federal short-stay hospitals that are open to the local public. Short-stay means that the average length of stay is less than 30 days. Community hospitals form the bulk of hospitals and hospital beds in the United States, and they provide general or specialty services. General community hospitals provide a broad range of services and do not specialize in any type of service. Specialty community hospitals provide only a specific type of service, such as obstetrics and gynaecology; eye, ear, nose and throat; orthopaedics; paediatrics; psychiatric care; and cardiovascular services. Non-community hospitals are those not open to the local public. Examples of non-community hospitals are prison hospitals and state mental hospitals.

The AHA classifies all community hospitals by ownership: non-profit, for-profit, and state and local government (NCHS, 2017). Non-profit hospitals are controlled by non-profit organizations such as religious organizations and fraternal societies. For-profit hospitals are owned by individuals, partnerships

or corporations. State and local hospitals are controlled by state and local governments. The AHA also places all community hospitals into eight categories of size by the number of beds, ranging from 6–24 beds in the smallest category, to 500 or more beds in the largest category (NCHS, 2017).

A government or non-profit community hospital can also be designated as 'teaching' or not. Teaching hospitals educate and train medical professionals, conduct medical research, provide care for the most serious conditions, and care for the uninsured and indigent (AHA, 2015). Currently, 75% of teaching hospitals are non-profit, while 12% of minor and 22% of major teaching hospitals are governing-owned (Burke et al., 2017).

Another category of community hospital is the critical access hospital (CAH) which serves rural communities that have no other close access to inpatient care. To be designated as a CAH a hospital must have no more than 25 acute care beds, an average length of stay of 96 hours or less per patient, and be located 35 miles from another hospital (or 15 miles in mountainous terrain) (Joynt et al., 2011). These hospitals receive cost-based, rather than DRG-based, reimbursement, which has helped them stay financially solvent (Joynt et al., 2011). The designation was established so that small rural hospitals would continue to provide basic inpatient and emergency services close to home for the rural population. Over 25% of acute care hospitals in the United States have the CAH designation (Joynt et al., 2011). The programme has helped in maintaining access to inpatient care for rural communities (Joynt et al., 2011), but since many rural hospitals do not have this status, more remains to be done to provide access in rural communities.

A final category of hospital is the specialty hospital. These are hospitals that provide a narrow set of services in a specialty area (Siddiqui et al., 2014). A broad grouping of specialty hospitals includes non-surgical hospitals providing care for cancer, psychiatric illnesses, rehabilitation, long-term needs (excluding nursing homes and skilled nursing facilities), children and women, and surgical hospitals serving cardiac, orthopaedic or general surgical patients (Al-Amin et al., 2010). The orthopedic and surgical specialty hospitals are a newer phenomenon. They are usually small hospitals specializing in cardiac, orthopaedic or general surgery (Siddiqui et al., 2014). Many specialty hospitals are physician-owned (Siddiqui et al., 2014).

In 2015 there were 5564 hospitals across the United States (NCHS, 2017). Of this total, federal hospitals were 4%, and non-federal were 96% (212 and 5352 respectively). Of non-federal hospitals, 87% (4862) were community hospitals and 13% (702) were non-community hospitals. Of all community hospitals in 2015, 58% were non-profit, 21% were for-profit and 20% were state and local. In 2015 just over 1100 of the community hospitals were teaching hospitals (CMS, 2016b), while in 2019, 1349 were critical access (RHIhub, 2019). Up-to-date information on the number of speciality hospitals is not available. In 2005 there were a total of 2108 non-surgical and surgical specialty hospitals (Schneider et al., 2008). Of those, in 2006 there were around 100–120 surgical specialty hospitals in the United States (Morrisey, 2006).

The percentages of federal, non-federal and community hospitals have not changed much since 1980. Non-federal hospitals in 1980 were 95% of all hospitals, and community hospitals were 88% of these (NCHS, 2017). Exceptions to this stability are shifts in the ownership structure of US hospitals and the recent growth in specialty hospitals. The percentage of non-profit hospitals is virtually unchanged, but for-profit hospitals grew from 12.5% of community hospitals in 1980 to 21% in 2015, while state and local government hospitals declined from 30% in 1980 to 20% in 2015.

What has changed the most over a 30-year time period is the utilization of hospital services. As outpatient visits for acute-care services have been increasing in the United States, inpatient stays in hospitals have been decreasing. Table 5.1 provides information on inpatient discharges and length of stay in US community hospitals from 1980 to 2015. The table shows that age-adjusted admissions in US hospitals per 1000 population fell from 174 in 1980 to 104 in 2015. Length of stay declined from 7.5 days in 1980 to 4.8 in 2005, falling 45% in this time period. Since then it has climbed back up to 5.4 days in 2010 and 5.5 days in 2015.

TABLE 5.1 Utilization of community hospital services in the United States, 1980–2015

	1980	1985	1990	1995	2000	2005	2010	2015
Admissions per 10 000 population	174	152	125	118	120	119	114	104
Average length of stay	7.5	6.6	6.5	5.4	4.9	4.8	5.4	5.5

Source: Kaiser Family Foundation, 2019i; NCHS, 2000; 2010; 2017

5.6.2 *Accessibility, adequacy and quality of inpatient hospital care*

DISPARITIES IN ACCESS TO, ADEQUACY AND QUALITY OF HOSPITAL CARE

The availability of hospital services depends on the insurance status of the individual seeking care, the type of hospital providing care and the geographical area. For those who have private insurance, Medicare or Medicaid, access to hospital care is usually not a problem. Care is accessed through a physician referral, either on an elective or an emergency basis. Insurance may require pre-authorization, which the physician arranges. The individual may go to any appropriate hospital that the physician recommends and that is on the insurance company's provider list. Individuals who are insured under federal programmes such as the VA or IHS are fully covered for care in VA and IHS hospitals respectively but not if they seek care outside those hospitals (except for emergencies).

While in the hospital, the insured patient will generally receive the tests and therapies recommended by the patient's physician(s). The patient's hospital stay may be short, since public and private insurance reimbursement systems currently encourage short stays[11]. Once the individual is discharged from hospital, follow-up care – such as home care (discussed in Sections 5.10.2 and 5.11.1) – may also be prescribed and received.

For those who do not have insurance or are underinsured and must pay large OOP expenses for hospitalization, access becomes more complicated and more dependent on the type of hospital providing care. If the patient is acutely ill, any hospital receiving payment from Medicare (which is nearly all hospitals in the United States) must provide care to that patient until they are stabilized. This requirement, a result of the EMTALA law discussed in Section 5.5.2, applies to individuals who show up on a hospital doorstep with a serious condition that requires immediate attention from an ER physician, specialist and/or surgeon.

However, when the patient's condition is not an extreme emergency, or if they have been seen for an emergency and stabilized, access to inpatient

11 Shorter stays in hospital could contribute to an increase in adverse events or readmissions or, on the contrary, could reduce adverse events because they reduce exposure to hospital-acquired infections and other complications (Hauck & Zhao, 2011). Studies of the relationship between length of stay and adverse events are difficult since the direction of causality is not known (do shorter lengths of stay give rise to more adverse events or do adverse events cause longer lengths of stay?), so there are few studies of this issue.

hospital care becomes more dependent on hospital ownership. Government-owned (public) hospitals, at the local, county or state level, must provide charity care to those who do not have insurance or cannot pay for OOP portions of their care (Villa & Kane, 2013). These hospitals provide the majority of charity care in the United States for the uninsured, Medicaid and other vulnerable patients (Ferrier & Valdmanis, 2008; Weiner et al., 2008).

Charity care is also part of the mission of non-profit private hospitals. These hospitals finance their charity care through special federal payments for treating Medicaid patients ('disproportionate share'), federal tax exemptions they receive if they meet certain charity care requirements, and cross-subsidies from other payers (Neuhausen et al., 2014; Valdovinos, Le & Hsia, 2015).

All totalled, these methods do not ensure complete reimbursement for care for the uninsured. Disproportionate share amounts have decreased under the ACA, the reasoning being that there are fewer uninsured in the population (Camilleri, 2018; Gurewitsch & Bittle, 2015). The lower costs due to additional insured patients, however, may not be as much as the reduction in DSH payments, leaving hospitals with a shortfall (Neuhausen et al., 2015). As well, the more competitive environment under managed care has decreased hospitals' ability to cross-subsidize or cost shift from other payers (making up for payment shortfalls from certain payers by charging other payers more) (Mas, 2013). Whereas non-profit hospitals are able to finance certain levels of charity care, large amounts of charity care place a financial burden on them.

Since there is no requirement to treat all indigent individuals needing non-emergency inpatient care and payment for that care may not be complete, non-profit private hospitals control the numbers of full charity cases they take (Hseih & Bazzoli, 2012). Until 2014 there were no prohibitions about billing and attempting to collect payment from patients, so rather than take a patient on as a full charity case, hospitals could bill for full or partial payment for services (Ferrier & Valdmanis, 2008). In some cases, hospitals would fail to inform patients about charity care, bill them undiscounted charges (which are higher than discounted charges to public or private insurers), and employ rough tactics to collect payment, including suing for payment, garnishing wages and bank accounts, seizing homes and contributing to personal bankruptcies (Helvin, 2008). Since 2014 the ACA has required hospitals to inform indigent patients about charity care, only bill them a

'reasonable amount', and not engage in excessive bill collection procedures (Nikpay & Ayanian, 2015).

For-profit hospitals also provide charity care but they do not receive tax exemptions for this. Studies are mixed as to whether they provide similar (Villa & Kane, 2013) or lesser (Valdovinos, Le & Hsia, 2015) amounts of charity compared to non-profit hospitals. A study by Weiner et al. (2008) found that for-profit hospitals provided required emergency charity care but severely limited other charity services. Surgical specialty hospitals are exceptions. These for-profit hospitals specialize in surgeries reimbursable by Medicare and private insurance, and as a rule do not take charity cases (Guterman, 2006; Blackstone & Fuhr, 2007).

Studies bear out the difficulty uninsured individuals have receiving inpatient hospital care. For example, Wilper et al. (2009) and Fowler et al. (2010) find that the uninsured are less likely than the insured to be admitted to the hospital.

The differences in hospital care for insured and uninsured individuals do not stop with access. If an uninsured person is admitted to a hospital, the care received may be different from that of an insured person. A 2010 review of 29 studies found that the uninsured were less likely to receive critical care services than those with insurance, and if admitted to an ICU they had fewer procedures and were more likely to have life support withdrawn (Fowler et al., 2010). Other studies also report that the uninsured receive fewer services (Lyon et al., 2011; Wilper et al., 2009) and are less likely to have invasive procedures (Wilper et al., 2009).

These access and care issues play out in disparities in hospital outcomes between the insured and uninsured. A review of six studies found higher mortality among critically ill uninsured patients while in hospital (Dillman et al., 2014). Other studies have recorded that compared with insured patients, uninsured patients had a greater likelihood of perceiving that they had not fully recovered after hospitalization for injury and that they were in worse health after the onset of a chronic condition (Hadley, 2007).

There are also geographical differences in access to and the quality of hospital care. Rural hospitals are often small and provide only a narrow range of services (Joynt et al., 2011). They may also be situated a significant distance from the patients that need access to them. The issue of distance was exacerbated following the transition to the DRG prospective payment system, which put rural hospitals under financial distress and led to closures.

Due to these developments the Balanced Budget Act of 1997 created the critical access hospital (CAH) designation (discussed in Section 5.6.1 above) to relieve financial pressure on small rural hospitals.

Although critical access hospitals improve access to inpatient care in rural communities, they may lag behind larger and more urban hospitals in their quality of care. One study found that CAHs had fewer clinical capabilities, worse processes of care and higher mortality rates for patients with AMI, CHF or pneumonia than non-CAH hospitals (Joynt et al., 2011). In contrast, a study of rural hospitals in general found that rural hospitals scored better on some outcomes compared to urban hospitals, and the same on other outcomes (Ganiet al., 2018).

Other disparities in hospital care exist along racial and ethnic lines. These are addressed in Section 5.14.

HOSPITAL CARE QUALITY OVERALL

Aside from these disparities in the quality of hospital care due to insurance status, race and ethnicity, overall hospital care quality in the United States appears to be improving over time. Hospital performance scores nationally for 17 quality measures for acute myocardial infarction, heart failure and pneumonia improved from 2005 to 2010 (Trivedi et al., 2014). In another national study, although post-surgical adverse events in cancer patients increased, failure to rescue and mortality among these patients decreased (Sukumar et al., 2013). In addition, nationwide rates of in-hospital adverse drug events declined 19% from 2010 to 2013 (Furukawa et al., 2017).

5.6.3 *Initiatives to improve inpatient care*

Until 2016 the expansion of health insurance through the ACA improved access to inpatient care in the United States, as the percentage of all US citizens uninsured at a given time fell from close to 18% in 2010 to 9.4% in 2018 (Cohen, Terlizzi & Martinez, 2019; Kaiser Family Foundation, 2018a). In addition to a direct impact on access, this improvement in access could also reduce hospitals' charity and uncompensated care costs, cost shifting and other irrationalities of the system, which in turn would improve

access by reducing incentives for private hospitals to avoid certain types of patients. However, these gains may not be sustained as the uninsured rate in the United States began to rise in 2018 (Kaiser Health News, 2019; Witters, 2019).

As for quality improvement (QI), hospitals in the United States engage in a number of initiatives from both public and private organizations. In what follows we provide highlights from some of the more important programmes. On the public side the CMS has three programmes that promote quality by paying for performance: the hospital value-based purchasing (HVBP) programme, the hospital readmission reduction programme (HRRP); and the hospital-acquired condition reduction programme (HACRP) (Pross, Geissler & Busse, 2017). The HVBP programme adjusts Medicare DRG payments based on whether hospitals performed below or above national average on a number of quality indicators. The HRRP programme adjusts DRG payments for several medical and surgical conditions for risk-adjusted, 30-day readmission rates for those conditions. The HACRP adjusts DRG payments according to the rate of certain hospital-acquired infections.

The data collected from these performance requirements are placed on a public website – 'Hospital Compare' – where a person can look up the QI information on individual hospitals and compare hospitals with one another (Pross, Geissler & Busse, 2017). The CMS also has designated certain hospital-acquired conditions that are considered to be 'never events' – medical errors that are particularly egregious, such as wrong-site surgery, that should never occur. The CMS will not pay for the care involving any one of these events (Meddings & McMahon, 2008).

The CMS also requires that in order to receive Medicare reimbursement hospitals either be accredited by a private agency or pass state inspection (Jha, 2018). Eighty-eight percent of hospitals choose to undergo Joint Commission accreditation (Jha, 2018). The Joint Commission assesses hospital performance on a set of performance and risk-adjusted outcome measures (some outcome measures, such as mortality and readmission, are from the CMS) (Pross, Geissler & Busse, 2017). The Joint Commission also has a set of 'Sentinel events' – incidents causing death or severe injury – which hospitals must report to the Joint Commission and which should never occur (similar to the CMS 'never events'). Information on individual hospital performance is accessible through the Joint Commission website (Pross, Geissler & Busse, 2017).

There is controversy over whether QI efforts really result in improvement in hospital performance. Some studies find that many of the quality indicators are inappropriate, and gaps in measurement remain (Tanenbaum, 2016; Winters et al., 2016). There is mixed evidence regarding accreditation's impact on quality (Jha, 2018; Lam et al., 2018). Questions exist regarding the success of value-based purchasing (or P4P) (Jha, 2017; Shi et al., 2014). Studies also fail to show that public reporting of quality measures improves hospital quality (Hu et al., 2017; Ryan, Nallamothu & Dimick, 2012; Yamana et al., 2018).

5.7 Dental care

5.7.1 *Services, utilization and settings*

Dental services include preventive and corrective care of the teeth and gums. Preventive care involves fluoridation, teeth cleaning, X-rays of the teeth and inspection of the mouth, gums and teeth. Corrective care is wide-ranging and includes filling of cavities, placing of sealants, repairing of fractures of the teeth, straightening teeth, fitting dentures and surgical treatment of gum disease (BLS, 2019). Poor oral health can have a large impact on the quality of life (Brennan & Teusner, 2015; Ortíz-Barrios et al., 2019; Willink, Schoen & Davis, 2016) and regular dental visits are necessary for prevention and the early diagnosis and treatment of dental problems (Naavaal, Barker & Griffin, 2017).

In 2016 only 68.7% of Americans over the age of 2 years received dental care at least once in the past year (NCHS, 2017, Table 78). This percentage has increased slightly since 1997 when it was 65.1%. When broken down by age group, the increases occurred mostly in children under 18 years of age and in adults 65 and older. Among adults aged 18–64 dental visits declined from 64.1% in 1997 to 61.1% in 2010, then rose to just above the 1997 level at 64.4%.

The financing of dental care may be related to these utilization patterns. Only 8% of dental care is funded through public agencies (ADA, 2012). Most of this funding is from the Medicaid programme for low-income families. In the Medicaid programme states are only mandated to cover the

dental care for children; coverage of adults is optional (Vujicic, Buchmueller & Klein, 2016). The Children's Health Insurance Program (CHIP) may or may not cover children. Medicare only pays for a small fraction of dental care because it only covers dental care when it is linked to the treatment of a medical problem (Willink, Schoen & Davis, 2016). In one study in 2012 only 12% of Medicare beneficiaries had at least some dental insurance to help pay bills (Willink, Schoen & Davis, 2016). The remaining 92% of dental care financing is from private sources, 48% of which is from dental insurance and the rest from OOP payments (ADA, 2012).

Americans may receive dental care in private settings, for which they must have dental insurance or pay out-of-pocket, or in community settings, where they pay a sliding scale fee for the service. Community-based clinics form the dental safety-net for those with limited incomes. They are sponsored by local public health departments, CHCs, not-for-profit service agencies, dental schools and school-based clinics (Carpino et al., 2017). Community-based services are usually provided in fixed locations but the use of dental vans allows for mobility of services in some areas (Spetz et al., 2019).

5.7.2 *Accessibility, adequacy and quality of dental care*

The unmet dental needs and disparities in care mentioned above indicate issues with access to dental care. In 2016 nearly 9% of Americans delayed or did not receive dental care due to the costs. In 2012 fewer than half of all Medicare beneficiaries had any dental visits in the past twelve months (Willink, Schoen & Davis, 2016). Correspondingly, 16% of US children and adolescents aged 5–19 years have untreated caries (Naavaal, Barker & Griffin, 2017), and untreated dental caries in the 20–64-year-old group have increased since the early 1990s (NCHS, 2017, Table 60).

Barriers to access are mostly financial: the costs of dental care combined with low income and lack of dental insurance make dental care prohibitive for many. In a survey of non-elderly adults, cost was the most common reason for not receiving dental care (Vujicic, Buchmueller & Klein, 2016). More people cite financial barriers to dental care than to any other type of healthcare (Vujicic, Buchmueller & Klein, 2016).

Being poor is a growing barrier to receiving dental care. A study by Nasseh and Vujicic (2014) found that the income gap in dental care utilization between poor and nonpoor adults grew from 2002 to 2010.

Having some form of dental insurance is a strong predictor of dental visits and oral health. Low-income individuals with Medicaid coverage have a higher likelihood of a recent dental visit (Choi, 2011; Decker & Lipton, 2015), and a lower likelihood of untreated caries compared to those with no Medicaid (Decker & Lipton, 2015). Medicare beneficiaries with dental insurance have been found to have nearly twice as many visits as those without insurance (Willink, Schoen & Davis, 2016). In general, having any type of dental insurance is associated with greater use of dental services (Chen et al., 2019; Yu, Elyasi & Amin, 2017).

Although public or private insurance removes some of the financial barriers to dental care for a portion of the population, shortages of dental professionals are additional barriers that can exist even for those who are insured. More than 4900 dental professional shortage areas exist in the United States (Rowland et al., 2016), so in these areas extending dental coverage through Medicaid expansion may not improve utilization.

Finally, dental professionals' reluctance to provide care to Medicaid patients creates a barrier for those with this insurance (Decker, 2011). For example, Maxey and colleagues (2018) found that although 75% of Medicaid-enrolled dentists were active providers, only 27% of them had 800 or more claims during fiscal year 2015.

5.7.3 *Initiatives to improve dental care*

A 2000 report of the Surgeon General recommended making oral health an accepted component of general health and called for an effective health infrastructure that meets the oral health needs of all Americans and integrates oral health effectively into overall health (NIDCR, 2019). A new Surgeon General's report on oral health will be published in 2020 (NIDCR, 2019). The report will relate the progress in oral health, identify issues, challenges and opportunities since the publication of the first report in 2000, and make recommendations for future action.

The ACA has helped in building the recommended oral health infrastructure. It has expanded health insurance to a greater percentage of the population and it mandates dental coverage of children and dependents up to age 25 (although as of 2019 coverage no longer has to meet an actuarial value range). However, dental services for adults are not mandated under ACA plans, so dental coverage for this large age group tends to remain under

stand-alone plans. As a result, improvements in access to dental care through ACA plans have been slight. ACA support for CHCs has contributed to improving access to dental services through these centres. Finally, states that have expanded Medicaid through the ACA have improved access to dental services for children. This may be negatively affected by the Medicaid work requirements being implemented by a few states, which to date have reduced the number of Medicaid beneficiaries in the states which have fully implemented the requirements (Sommers et al., 2019).

In order to increase the number of practising dentists a number of states (33 plus the District of Columbia) have funded dental loan repayment programmes to attract graduating dental students to underserved areas (NCSL, 2014a). States are also improving access through the increased use of dental hygienists and dental assistants. Thirty-six states allow dental hygienists to practise in settings such as schools and nursing homes and to perform some services without dentist authorization (NCSL, 2014a). Dental hygienists may be directly reimbursed by Medicaid in 16 states.

5.8 Behavioural healthcare

5.8.1 *Services and settings*

Behavioural health care is the 'promotion of mental health, resilience and wellbeing; the treatment of mental and substance use disorders; and the support of those who experience and/or are in recovery from these conditions, along with their families and communities' (SAMHSA, nd). Mental and substance use disorders severely impact the lives of individuals and the cost of healthcare delivery in the United States. Persons with these disorders are more likely to have chronic conditions such as high blood pressure, heart disease and stroke, and are more likely to use hospitals and EDs (SAMHSA, nd). In this section we discuss mental health and substance use disorder services that fall under the umbrella of behavioural health.

As discussed in Chapter 4, the behavioural healthcare landscape has changed significantly over the past few decades. Long-term institutionalization, which until the 1970s was a major treatment strategy for many behavioural health problems, is no longer the preferred way to

treat such problems. Instead, treatment occurs through outpatient care and short-term inpatient stays (Lutterman et al., 2017).

These shorter inpatient stays have been accompanied by the increased use of pharmaceuticals, which have made it possible to treat mental and substance use disorders outside the institutional setting. Advances in the pharmacology of antipsychotics and antidepressants have meant fewer side-effects and risks from overdose compared to the older medications (Ling, Berndt & Frank, 2008). Between 1977 and 1997 the percentage of cases treated with psychotropic medications increased by 22% (Ling, Berndt & Frank, 2008). The use of antidepressants on an outpatient basis doubled (Marcus & Olfson, 2010). From 1996 to 2007 treatment with antipsychotics for anxiety disorders increased from 10.6% to 21.3% (Comer, Olfson & Mojtabai, 2010), but the use of antidepressants for depression did not increase significantly (Marcus & Olfson, 2010). Among child and adolescent visits in which a mental disorder was diagnosed, treatment with psychotropics increased from 22.2% to 32.2% between 1996 and 2007 (Comer, Olfson & Mojtabai, 2010). Treatment with attention deficit-hyperactivity disorder (ADHD) medications, antidepressants and antipsychotics increased, as did co-prescription of antidepressants with antipsychotic medications and ADHD medications with antipsychotic medications. There was a decrease in treatment using mood stabilizers. In 60% of visits in which new psychotropic medications are begun, medications are prescribed without a diagnosis of a mental disorder (Rhee & Rosenheck, 2019).

At the same time as the rise in use of pharmaceuticals, psychotherapy and mental health counselling have declined. The percentage of outpatient visits in which psychotherapy was conducted declined from 44.4% in 1996–1997 to 28.9% in 2004–2005, a drop of 35% (Olfson & Marcus, 2010). Many outpatient visits (57% in 2007) only involve the dispensing of medications (Olfson & Marcus, 2010). Still, therapy remains a significant treatment modality for mental illness. Therapists may be psychologists, social workers, nurses or others with training in mental health counselling (Shi & Singh, 2019).

Mental health and substance use disorder services are provided in many settings. Public settings include county, state and federal hospitals (e.g. VA and military) (SAMHSA, 2018). Private settings include doctors' offices, outpatient mental health centres, residential treatment centres, psychiatric hospitals and psychiatric units of general hospitals. Some other settings

include CHCs and nursing homes. These settings offer services at one or more of four levels of care: 24-hour hospital inpatient services (16% of facilities), 24-hour residential services (17% of facilities), less than 24-hour day treatment or partial hospitalization services (16% of facilities), and less than 24-hour outpatient services (76% of facilities) (SAMHSA, 2018).

Insured patients generally receive behavioural healthcare in the ambulatory settings of offices of private psychiatrists, psychologists and licensed social workers, and inpatient settings of private psychiatric and general hospitals (Cummings et al., 2017). Patients without insurance who cannot pay OOP expenses tend to be treated in state and county mental health hospitals, CHCs, EDs and hospitals (if the individual is in a severe crisis) (Cummings et al., 2017).

5.8.2 *Accessibility, adequacy and quality of behavioural healthcare*

In 2016 nearly one in five adults in the United States had a mental health condition (Murphy, 2017) and in 2014, 1% of the population received treatment for alcohol or illicit drugs (SAMHSA, 2017). Within the last decade an increase in opioid use, misuse and related overdoses has become a serious public health concern in the United States (DHHS, 2019). Drug-overdose deaths in the United States have almost tripled within the last two decades, with opioid-related deaths accounting for 60.9% (Rudd et al., 2016). While the epidemic began with prescription opioids, users turned to lower-cost alternatives and transitioned to heroin and synthetic opioids (Ciccarone, 2019).

At the same time, in 2016 only 43% of adults with any mental health disorder received treatment, and less than 11% of adults with a substance use disorder received treatment (AHA, 2019). Children in low-income families had the greatest rate of behavioural health disorders but utilized behavioural health services the least (Bringewatt & Gershoff, 2010).

Financial barriers are a major source of these access problems. Along with the shift in treatment settings since 1970 (described above), there has been a shift in payers from state and local governments to Medicaid, Medicare and private insurance (Mark et al., 2016), and within these sectors a shift from private insurance to Medicare and Medicaid as employers drop insurance coverage (Rowan, McAlpine & Blewett, 2013). Many people are not covered by these payers, cost-sharing has been increasing, and limits

exist on the payments and extent of benefits. People with behavioural health disorders are less likely to have health insurance than those without: in 2007 the odds of having health insurance were 40% lower for people with serious psychological distress than for those without serious distress (Rowan, McAlpine & Blewett, 2013). Even with insurance, people with behavioural health disorders tend to have lower incomes, so cost-sharing is difficult.

Reimbursement limitations of public and private insurance have impacted psychiatrists' acceptance of insured patients. The percentage of psychiatrists that accepted private insurance, Medicare or Medicaid in 2009–2010 was lower than that of physicians in general, and that percentage has been declining (Bishop et al., 2014).

Shortages of behavioural health beds and providers are also reducing access to care. According to the National Council Medical Director Institute, psychiatric inpatient beds are being reduced due to lower rates of reimbursement compared to other medical reimbursements and to difficulty finding psychiatrists to staff the inpatient units (NCMDI, 2017). A 2016 HRSA report found significant shortages of psychiatrists, psychologists, social workers, school counsellors, and marriage and family therapists (Kepley & Streeter, 2018). Also, the geographic supply of psychiatrists, psychologists and psychiatric nurse practitioners is distributed unequally, being lower in non-metropolitan areas compared to metropolitan areas (Andrilla et al., 2018). There is a shortage of mental health providers in child psychiatry, and most are unable to prescribe medications (Bringewatt & Gershoff, 2010).

Turning to quality issues in behavioural healthcare, the measurement of behavioural health quality is underdeveloped (IOM, 2006a; Pincus, Spaeth-Rublee & Watkins, 2011). In 2006 the IOM noted that there are fewer objective, standardized, evidence-based diagnostic measures in mental health and substance use disorders compared to general health measures, among other issues (IOM, 2006a). The IOM report listed a number of recommendations for developing the measurement system so that quality can be properly analysed and publicly reported in behavioural health. According to a report by Pincus, Spaeth-Rublee and Watkins (2011), little progress has been made.

In practice, some structural issues in the behavioural health field lead to lower quality of care. First is the lack of integration of mental health and substance use care with general healthcare, particularly primary care (Unitzer et al., 2012). This leads to issues with lack of coordination of

treatment, particularly medications, and missed referrals and follow-up care. In older adults deficits have been noted related to patient engagement and treatment follow-up and modification (Hartford, 2012). Second is high outpatient behavioural health provider (psychiatrists, psychiatric APRNs and PAs, and psychiatric pharmacists) workload. This leads to brief, back-to-back appointments that limit in-depth assessment and counselling, and inadequate collaboration with other members of the treatment team and/or consultation with primary care providers (NCMDI, 2017).

5.8.3 *Initiatives to improve behavioural healthcare*

For behavioural healthcare to be of higher quality and accessible to more of the population, efforts are under way to reduce the financial, provider and geographical barriers to care and to improve care coordination. Several federal policies have been enacted since 2008: the Mental Health Parity and Addiction Equity Act of 2008; the Medicare Improvements for Patients and Providers Act of 2008; and the Affordable Care Act (Han et al., 2017).

The Mental Health Parity and Addiction Equity Act of 2008 mandated that behavioural health benefits and cost-sharing in group health plans be no different than those in general health plans (Han et al., 2017). This rule applies only if the insurer provides mental health and substance use disorder benefits, and small employers are exempted. The programme has had some successes: in 2014, 68% of insurance products reported having expanded behavioural health coverage since 2010 (Hodgkin et al., 2018). The Medicare Improvements for Patients and Providers Act of 2008 adjusted co-payments for outpatient psychiatric services, which were 50% in 2008, to be the same as the 20% co-payments for general healthcare, by 2014.

The ACA expanded and improved behavioural health services through expanded behavioral health coverage and better integration of mental health and substance use treatments with general medical services (Han et al., 2017). Behavioural health services are essential benefits under ACA marketplace plans and states can expand Medicaid benefits to individuals with incomes at or below 138% of the federal poverty level – a population at greater risk for behavioural health problems (Rowan, McAlpine & Blewett, 2013).

These ACA expansions have also met with some success. In general, mental health treatment rates increased significantly, but racial/ethnic disparities in mental health remain (Creedon & Cook, 2016). Among

low-income adults, Medicaid expansions were associated with a reduction in the rate of uninsurance for behavioural health conditions, and an increase in the probability of receiving behavioural health treatment (Wen, Druss & Cummings, 2015).

Coverage has increased significantly for those with and without behavioural health conditions, particularly for those who live at <=200% of the federal poverty level. Even with increases in insurance coverage, however, there has been no increase in utilization of services for treating substance-related disorders (Goldman, 2017).

In addition to these policies to expand behavioural health insurance coverage, the HRSA's behavioral health workforce education and training (BHWET) programme has supported the training of new behavioural health providers by funding universities and other non-profit organizations. The programme emphasizes training and working in underserved communities. Nearly 47% of providers trained under this system were working in a medically underserved community or rural area one year after graduation (Kepley & Streeter, 2018).

5.9 Pharmaceutical care

5.9.1 *Definition, services and utilization*

Pharmaceuticals are highly utilized in the United States. From 2015 to 2016 close to 50% of all Americans used one or more prescription drugs within a 30 day period (Martin et al., 2020). Utilization is particularly high among those aged 60 years and older (85%). It is even fairly substantial among children 0–11 years (18%) and 12–19 years (27%). The number of prescription drugs filled by Americans has grown four times more than population growth over the past two decades (Carr, 2017). Between 1980 and 2015 per capita expenditures on pharmaceuticals climbed from $53 per year to $1011 per year (Sarnak et al., 2017). Expenditures in 2015 are 30–90% higher in the United States than in nine other high-income countries (Sarnak et al., 2017). Although US spending on pharmaceuticals is significantly higher than other high-income countries, utilization is similar (slightly above the median) (O'Neill & Sussex, 2014), leaving the type of medications utilized

and drug prices as primary reasons for the differences in spending.

Pharmaceutical production and marketing in the United States are completely privatized but regulated by the FDA of the federal government. Prices are not regulated, not even for drugs obtained for publicly insured individuals, although the government negotiates payment discounts in some of its programmes, such as Medicaid (but not Medicare, where a provision in the Part D legislation prohibits Medicare from negotiating bulk discounts on drugs).The regulation of pharmaceuticals is discussed in Section 2.5.2.3.

Strictly speaking, 'pharmaceutical care' includes both the drugs that patients receive and the advice and information from pharmacists regarding those medications (Shi & Singh, 2019). Pharmacists advise both physicians and patients regarding drug effects, side-effects and interactions. They may assist the physician in deciding the optimum medication to prescribe and with titration of dosage.

In the ambulatory care setting, pharmaceutical care is provided in pharmacies located in clinics and commercial stores, where physician prescriptions are filled for the public. Institutional settings, such as hospitals and nursing homes, have pharmacy departments that dispense medications and information.

5.9.2 *Accessibility, adequacy and quality of pharmaceutical care*

Pharmaceuticals are both overused and underused in the United States. Overuse and inappropriate use has been noted to occur with certain medications such as antibiotics, antidepressants and other psychotropics, and opioids (see Section 5.8.2) and other painkillers (Boehlen et al., 2019; Fiore et al., 2017; Hsu, 2017; McLaren & Lichtenstein, 2018; Scott et al., 2015). Among the elderly, inappropriate prescribing and polypharmacy are major concerns (Liu, 2014; Oktora et al., 2019; Scott et al., 2015). Inappropriate medications are those for which the potential risk outweighs the potential benefit and those for which a good alternative is available (Fahrni et al., 2019). Polypharmacy is the concurrent use of five or more medications (Liu, 2014; Oktora et al., 2019). It can cause serious adverse events in the elderly since their bodies have more difficulty absorbing, metabolizing and eliminating drugs (Liu, 2014; Oktora et al., 2019).

Underuse is associated mainly with financial barriers (Miranda, Serag-Bolos & Cooper, 2019). The prevalence of cost-related medication underuse in the form of not filling out a prescription or skipping a dose is nearly 17% in the United States (Morgan & Lee, 2017).

Pharmaceuticals are high-expense healthcare items. For those who do not have drug coverage through insurance, and who must pay out-of-pocket, the cost of prescription medications can comprise a significant proportion of their monthly income. Many cannot afford the medications and will either not fill prescriptions or will try to stretch the medications out over longer periods of time by cutting pills in half and other dangerous measures (Herman et al., 2015).

For those who have insurance with drug benefits, coverage of pharmaceuticals is uneven. Co-payments, deductibles, caps and other cost-sharing methods are used by both public and private insurance. Medicare only added a drug benefit option in 2006. As discussed in Section 3.3, there are significant gaps in coverage in the Medicare drug plans. Medicaid drug plans differ from state to state. Although outpatient prescription drugs are an optional benefit, all states currently provide coverage (CMS, 2019c). They are permitted to have formularies and to exclude classes of drugs. States may require co-payments, especially for non-generics.

Employer-based insurance plans often have prescription drug benefits, but formularies may be limited and there is cost-sharing, sometimes to a significant degree. These plans may have deductibles that must be met before the benefits kick in, co-payments for each prescription, or a cap on the amount covered in a year. Employer-based plans may also cover generic drugs at a higher rate than non-generics (Kaiser Family Foundation, 2018b).

In 2018, 69% of all private industry workers had health insurance coverage through their place of employment (BLS, 2018d), and nearly all these workers' plans (99%) included outpatient drug coverage (Kaiser Family Foundation, 2018b). All plans had cost-sharing arrangements, most commonly co-payments for non-generic drugs (Kaiser Family Foundation, 2018b). A few plans had no cost-sharing for generic drugs.

Several studies indicate that the cost-sharing strategies of all types of insurance can lead to underutilization of necessary and effective medications (Shi, Lebrun & Tsai, 2010) and that, vice versa, reducing or removing cost-sharing improves medication adherence (Sensharma & Yabroff, 2019). For example, Medicare beneficiaries who reached the doughnut hole – a gap in coverage where co-payments are 100% – were twice as likely to discontinue

their medication compared to those who had not (Polinski et al., 2011). Individuals with no co-payments have better medication adherence and fewer vascular events than those with co-payments (Choudry et al., 2011).

Disparities in access to pharmaceuticals exist along race, ethnicity, socioeconomic and other demographic lines. Compared to Whites, Hispanics are less likely to receive prescriptions (Shi, Lebrun & Tsai, 2010). Those who are Hispanic, Black, over the age of 74, unmarried, in poor health, have a low- to middle-income or have less than a high school degree are more likely to be covered for medications through a public programme or to have no insurance for medications (Kanavos & Gemmill-Toyama, 2010).

5.9.3 *Initiatives to improve pharmaceutical care*

Polypharmacy and inappropriate prescription of medications among the elderly are being addressed by physicians through the use of screening criteria such as the Beers criteria and the systematic discontinuation of a proportion of medications. The Beers criteria tool, first developed in 1997 and updated in 2002, classifies drugs according to those that should be avoided in older adults, those that exceed a maximum recommended daily dose and those that should be avoided in combination with certain patient comorbidities (American Geriatrics Society, 2019). The tool, with adjustments, is being used in elderly and non-elderly populations that use a large number of medications. Systematic reduction of medications has been shown to improve the health of patients with polypharmacy (Garfinkel & Mangin, 2010).

Federal, state and professional policies and guidelines, such as state-based prescription drug monitoring programmes (PDMPs), have been implemented to monitor and reduce misuse of opioids (Gugelmann & Perrone, 2011). PDMPs are data repositories that make information on the prescribing history of individuals available to prescribers. There is some evidence that states that have adopted PDMPs have had reductions in opioid prescribing and opioid-related morbidity and mortality (Patrick et al., 2016). By 2014, 49 states had implemented a PDMP (Patrick et al., 2016).

Underuse of medications due to affordability concerns is being addressed through expansion of general insurance under the ACA. For Medicare patients, in 2011 a gradual reduction in the size of the doughnut hole began, and it will be eliminated entirely in 2020. At that point, standard Part D

drug coverage will include a 25% coinsurance rate after a deductible, until catastrophic coverage kicks in after the person has spent several thousand dollars out-of-pocket.

5.10 Post-acute care: rehabilitation, intermittent home care and subacute care

This section covers three categories of post-acute care services – rehabilitation, 'intermittent' home care and subacute care – that are situated in intensity and length of services between acute care and long-term care. Patients receiving these services do not require the intensive monitoring and treatments of acute care but they still require monitoring, therapies, education or other professional care. A patient may receive the services for a longer period of time than is typical in acute care but there is an end point to the services and the patient does not continue to receive the services for the remainder of life as in long-term care. The goal of these services is an improvement in condition so that the patient can return to prior levels of self-care and can return to the community, or the prevention of a worsening of the condition. Finally, the services may be provided in both institutions and the home.

5.10.1 *Rehabilitation*

Rehabilitative care aims to cure, improve or prevent a worsening of a condition. Examples are physical, occupational, speech and other therapies following a stroke, or physical therapy following orthopaedic replacement surgeries such as hip or knee. These services are often a part of the other two types of service addressed in this section – intermittent home care and subacute care.

Rehabilitation settings include outpatient centres, inpatient rehabilitation departments, freestanding rehabilitation hospitals, departments in subacute care facilities and nursing homes, and through home care (Shi & Singh, 2019). The proportion of rehabilitation services that occurs in each of these settings is unknown. Services include physical, occupational, speech–language and respiratory therapy.

Access to rehabilitation services depends on financial, personal and systemic factors. Rehabilitation services are covered under both public and private insurances and lack of insurance is a major financial barrier to rehabilitation services (Akande et al., 2018; Shah et al., 2018; Zogg et al., 2015). Recent insurance expansion under the ACA (due to both the private marketplace and Medicaid expansion) has significantly increased access to rehabilitation services (Akande et al., 2018; Zogg et al., 2015). Other barriers to access include distance to the rehabilitation centre, along with transportation problems (Bakhshayeh et al., 2019).

Both general and specific measures are available to assess the quality of rehabilitation care. A general instrument is the inpatient rehabilitation facility-patient assessment instrument (IRF-PAI) (CMS, 2019d). Since 2002 the CMS has required the collection of data for the IRF-PAI in facilities in which 75% or more of the patients receive intensive rehabilitation. In 2014, as a part of the IMPACT Act, discussed in greater detail in Section 5.11, reporting of these measures became mandatory. Facilities that fail to submit data face payment reductions (CMS, 2019e). Search results for quality and performance measures in rehabilitation report that cardiac rehabilitation is a specific area in which quality measurement is active (Thomas et al., 2018).

5.10.2 *Intermittent home care*

Intermittent (or skilled) home care refers to home care services that are provided for a short time and that require visits by a healthcare professional such as an RN or therapist (Wang et al., 2017). Intermittent home care is provided to patients who need skilled nursing care or therapy but who are unable to drive to the hospital or clinic to receive the care (Landers et al. 2016; Wang & Lustig, 2017). Patients receive care by RN, therapists, technicians and home health aides, with the RN coordinating the care. A patient returning home following knee replacement surgery, for example, will receive post-operative nursing care and education from RNs regarding mobility restrictions and medications, among other nursing care. The patient will also receive physical therapy and training to restore function to the joint. Some patients may also need home health aides to help them with baths and other personal care until they are able to care for themselves. As long as the patient is receiving nursing care or therapies, they may be eligible for aide visits.

The term 'intermittent' is used to differentiate from 'private duty' home care. The term 'private duty' pertains to care provided by home health aide organizations or units of home healthcare organizations that may be custodial and may continue over a long period of time (NAHC, 2010). Private duty home care is discussed in the next section on long-term care.

Intermittent home care grew in the 1980s and 1990s as hospital lengths of stays fell and Medicare reimbursement for home care was generous. Patients were being discharged home sicker than before and with healthcare needs that continued for several days post discharge. Home care allowed many surgeries to be performed on an outpatient basis or with short inpatient stays because the care normally provided in the hospital could be performed in the home. Patients with medical problems could also be discharged sooner if they could be followed up at home.

While the number of home care admissions for Medicare patients remained steady through the 1990s and 2000s, the number of home visits (for any type of care – skilled nursing, physical therapy, nurses' aide, etc.) per Medicare patient fell from 74 per client in 1996 to 35 in 2008 (NAHC, 2010). The reason for this decline was the Balanced Budget Act of 1997, which instituted prospective payment for Medicare recipients of home care, effectively reducing the number of reimbursable home care visits for Medicare patients (Dey et al., 2011). Consequently, the number of home health agencies also declined in this period. The number of Medicaid patients, however, has grown significantly since 1996 and is projected to increase by more than 50% over the next 15 years (as the proportion of US residents over 65 doubles from 2010 to 2030) (Landers et al., 2016), so home health care remains a growing segment of the US healthcare system. The number of Medicare-certified home health agencies has increased from approximately 7500 in 2000 to more than 12 000 in 2015, and the number of patients served increased from 2.5 million in 2000 to 3.5 million in 2013. As of 2013, home care provided nearly 123 million visits to the 3.5 million Medicare beneficiaries receiving home care (Wang et al., 2017).

Access to intermittent home care is largely through Medicare, and to a lesser degree through Medicaid and private insurance. Medicare beneficiaries can receive the services if they are homebound, need intermittent skilled nursing and/or therapy services, are under the care of a physician, and need necessary home health services ordered by a physician (Landers et al., 2016). These services often follow a hospitalization, but increasingly patients with Medicare are being admitted directly from the community (Wysocki, Sigalo & Cheh, 2019). For those who do not have either public or private

insurance, intermittent home care must be paid for out-of-pocket. This can be a deterrent to the utilization of these services.

Two types of quality measure are currently being used in home care: process and outcomes (CMS, 2019f). The data for these measures come from the outcome and assessment information set (OASIS), required to be submitted to the CMS by home health agencies, and from data submitted in Medicare claims. The OASIS data are used by Medicare to publicly report quality in home care agencies through Home Health Compare, an online reporting system similar to Hospital Compare discussed in Section 5.6.3. Home care agency reimbursement is now also affected by certain quality measures.

5.10.3 *Subacute care*

Subacute care is a subset of transitional care, which refers to time-limited care that occurs during transitions from one healthcare setting to another, such as from hospital or nursing home to home (Naylor et al., 2011; Sampurno et al., 2019). While transitional care broadly includes programmes of care that may be performed in a facility or while the patient is at home (such as home visits by nurses and therapists), subacute care refers to care of patients who are not stable enough to go home and the care is provided in a facility or unit of a facility such as a skilled nursing home, hospital or specialty hospital. Subacute care is for patients who are stable enough to be cared for outside an intensive care unit in a hospital, who will need care for a longer period of time than a hospital length of stay recommends, and who require more intense medical supervision and therapy than in a typical nursing home's skilled nursing beds (Joshi et al., 2012; Qaseem, Weech-Maldonado & Mkanta, 2007). Patients may have rehabilitative or complex medical needs and require monitoring and other nursing care. Prior to the 1980s, patients such as these remained in hospitals for weeks, even months at a time, but after the advent of PPS and managed care, insurance payments to hospitals were not enough to continue this practice (Weech-Maldonado, Qaseem & Mkanta, 2009). This led to the advent of the subacute care industry.

The duration of subacute care varies from short term (3–30 days), to intermediate (31–90 days), to long term (91 days–2 years) (Lewin-VHI, 1994). Patients who become well enough will go home. A small number of patients die. Patients who require care beyond the long-term period may

be transferred to a specialized unit in a nursing home or other long-term institutional setting.

The American Subacute Care Association states that a wide range of subacute services are available (Lewin-VHI, 1994). These include brain injury care, high intensity stroke, cardiac and orthopaedic care, ventilator care, complex wound care and infusion therapy. These services are provided through physician supervision, nursing care, therapies, laboratory services, pharmacy services and case management. Rehabilitation services play an important role in many cases.

Subacute care is expensive. Medicare will cover up to 100 days of subacute care if the beneficiary was admitted to subacute care following three inpatient days in a hospital (Lewin-VHI, 1994). Medicaid coverage for those who are eligible varies from state to state. Private insurance, likewise, may cover care up to length of stay limits. However, without these forms of coverage, individuals must pay out-of-pocket. Such expenditures may be out of their reach or may result in large debts, even bankruptcies.

As with rehabilitation, both general quality measures as well as those that are specific to the subacute care setting exist (Bryant et al., 2004). Two general data sets are the Medical Outcomes Study Short Form-36 (SF-36) and the Medicare Current Beneficiary Survey (MCBS). The SF-36 contains items and scales regarding physical functioning and limitations, pain, social functioning, mental and emotional health, vitality and health perceptions. The MCBS is a rotating four-year national sample of Medicare beneficiaries that is combined with administrative data and that assesses health status and function. Many of these items map to the Resident Assessment and Care Screening data set (RAI) used in nursing homes. Some setting-specific quality measures for subacute care can be found in the MDS and the IRF-PAI, discussed in Section 5.10.1 (Bryant et al., 2004).

5.11 Long-term care

Long-term care is a category of healthcare containing a number of different healthcare services for individuals with conditions that are part of normal ageing, or that are not expected to significantly improve, and that need ongoing care. The long-term care population includes older people, people with physical and mental disabilities and people with chronic diseases. Several of the long-term care services – on a continuum from

community-based to institutional care – include private duty home care, adult day care, independent living, assisted living, specialized intermediate care and nursing home care. Other formal services for long-term care that are not addressed in this section are adult foster care, senior centres, home delivered and congregate meals, homemaker services, Alzheimer's facilities, and residential and personal care facilities. Informal care-giving, which is a significant proportion of long-term care, will be discussed in Section 5.13.

5.11.1 *Private duty home care*

Private duty home care is an option for individuals who need ongoing nursing or custodial care and whose families have the resources to keep the patient at home. With this type of long-term care, a nurse and/or home health aide goes to the patient's home for a prescribed period of time and frequency, anywhere from a few hours or a few days a week, to a several hours daily, to round the clock (Harvard Health Letter, 2014; NAHC, 2010). Patients can receive various homemaker services, such as housework, cooking, shopping and transportation (Harvard Health Letter, 2014). They may also receive home health aide services which involve personal care, such as help with bathing, dressing, eating, using the bathroom, walking or transferring and medications.

Private duty home care has the advantage of allowing the patient to remain at home rather than being institutionalized. One disadvantage is that it can be difficult for family members to arrange their home and schedules to accommodate the person needing care. Another disadvantage is that it can be costly. Unless the patient also needs skilled professional care, Medicare and private health insurance will not cover homemaker or home health aide services. Medicaid may or may not cover the services (coverage is on a state-by-state basis) (Harvard Health Letter, 2014: NAHC, 2010). Long-term care insurance may cover the care. If a patient does not have insurance coverage, the family will have to pay out-of-pocket. For services of a few hours a week, the costs are significantly less than those of a nursing home and this makes private duty home care an attractive alternative to nursing home care. But as the amount of time increases, the costs become significant. At some point, nursing home care is less expensive than home care.

Private duty services may be part of the services of a home healthcare agency that also provides intermittent care, or they may be provided by dedicated home care aide agencies that only provide private duty home aide care (NAHC, 2010). The agencies that provide private duty care exclusively are not certified by Medicare since their private duty services are not covered by Medicare.

5.11.2 *Adult day care*

In 2016, 286 300 participants were enrolled in 4600 adult day care centres (ADCCs) in the United States (Caffrey & Lendon, 2019). Adult day care is an option for individuals who need supervision during the day, support with meals, activities to participate in, and opportunities for social interaction. ADCCs may provide medical or social services, or be capable of providing both (Anderson et al., 2013). To provide medical services, centres must have a strong professional healthcare staff, including RNs, LPNs and nursing assistants, as well as physical, occupational and speech therapists, social workers and dietitians. Around 66% of ADCCs provide skilled nursing care and nearly half provide licensed therapeutic services (Happ, Dabelko-Schoeny & Shin, 2018). To provide social services centres employ therapists, nutritionists and social workers to organize social activities, recreational activities and nutrition counselling. Some centres provide both medical and social services. All centres offer meals, a certain amount of personal care, and activities. Optional services include transportation to and from the centre, nursing care, counselling, social services and therapies.

The type of individual that a day care centre will accept depends upon centre capabilities. Centres that can provide medical care can accept individuals needing nursing and custodial care while centres that only provide social activities do not have the capability to take these patients. In general, adult day care would not work for individuals who need heavy amounts of custodial or skilled nursing care, such as frequent monitoring of vital signs and invasive treatments. For this reason, centres tend to establish limits in terms of the number and types of deficits in activities of daily living a person can have, and the intensity of medical care the person needs. Adult day care has been a good option for individuals with cognitive impairment.

Adult day care is often used by families to keep a family member in the home who otherwise would need institutionalization (Caffrey & Lendon,

2019). This delays institutionalization, gives family care-givers a respite from caring for the individuals, and allows family members to work (Jarrott & Ogletree, 2019). This kind of arrangement, however, means a commitment by the family to ongoing care in the hours that the individual is not in day care (evenings, nights and weekends) – a significant amount of informal care-giving. Families may supplement adult day care with private duty home care services (discussed in Section 5.11.1).

Adult day care is not covered by Medicare but may be covered by Medicaid (on a state-by-state basis) (Rome, Harris-Kojetin & Park-Lee, 2015). It is not covered by health insurance, but may be a part of long-term care insurance. Otherwise, individuals and families must pay out-of-pocket. A sliding scale may be available to low-income individuals paying out-of-pocket. Medicaid is the largest source of ADCC revenues (52%), followed by other government sources (not identified) and private payments (long-term care insurance and out-of-pocket payments) (Rome, Harris-Kojetin & Park-Lee, 2015).

5.11.3 *Independent living*

Independent or retirement living centres do not deliver clinical services but do offer facilities that are geared towards supporting the needs of frail and/or disabled adults while allowing them to maintain their own independent lifestyles. Examples of such support include railings in hallways, large bathrooms that allow for wheelchairs, grab bars in bathrooms and pull cords to call for help in the event of an emergency (Shi & Singh, 2019). Facilities may also provide transportation for shopping and outings and may organize recreational activities and social events (Ayalon, 2018). Some facilities provide one or two meals a day in a communal area. If a resident needs more intensive services for a period of time, the individual must usually arrange these services with a home healthcare agency in the area. Living arrangements vary from separate cottages in centre complexes to multi-unit apartments in centre buildings.

The advantage of independent living arrangements compared to an individual maintaining their own house or apartment is in the specialized support mentioned earlier, and in the amenities such as transportation and recreational activities. A person living in a retirement centre may also have

more of a social life than someone who stays at home. Another advantage is that someone in an independent living centre may have the ability to transfer to more intensive services as he or she becomes frailer or disabled. This depends on the services in a specific facility and arrangements that are made between the resident and facility. Continuing care retirement communities (CCRCs) are a type of full service facility that allows residents to transfer from independent living to assisted living and to skilled nursing care as needed (Ayalon, 2019). CCRCs require financial transactions upfront, entrance fees and private financing.

5.11.4 *Assisted living*

Assisted living facilities (ALFs) provide 24-hour supervision, assistance with activities of daily living (ADLs), social services, recreational activities, and some nursing and rehabilitation services (NCAL, 2018; Silver et al., 2018). The ADL assistance provided by ALFs is with eating, bathing, dressing, toileting and walking (Argentum, 2020). Housekeeping, laundry and transportation are provided (NCAL, 2018). ALFs are for individuals who can walk but who need help with some personal care. The typical ALF resident is a senior citizen who needs some assistance with two to three ADLs (e.g. bathing, dressing and cooking).

One advantage of assisted living over living alone or with family is the supervision that occurs. Someone who, for example, may have a tendency to fall will be checked on periodically. Another advantage is that the individual will receive personal services that otherwise would have to be provided by family members or home health aides. ALFs are also good for providing a stronger social milieu than might occur if the individual lived alone. Socializing can occur during meal times or in recreational activities. Finally, the ALF environment is more home-like and less clinical than that of a skilled nursing facility (NCAL, 2018).

Medicare and private health insurance do not cover assisted living. Medicaid in some states pays for services but not room and board (NCAL, 2018). A few individuals have long-term care insurance that covers the costs, but the majority of assisted living residents (85%) pay out-of-pocket for the care (NCAL, 2018).

All 50 states regulate assisted living. Regulations establish the services the facilities are mandated to provide. These will vary from state to state except that all states require 24-hour care and supervision for those who need assistance (ALFA, 2009; Allen, 2011).

5.11.5 *Specialized intermediate care facilities for individuals with intellectual disabilities*

Intermediate Care Facilities for individuals with intellectual disabilities (ICF/ID) is a Medicaid benefit that provides room and board, 24-hour nursing care, therapies and social services for intellectually and developmentally disabled persons who qualify for Medicaid (CMS, 2015). These services are available only in a residential facility licensed and certified by the state. Each patient has a treatment programme to help them acquire behaviours to achieve as much independence as possible and to prevent or reduce the loss of function. Most of the individuals who receive care provided by these specialized facilities have other disabilities as well as mental retardation. Many are unable to walk. Many have seizures, behaviour problems, mental illness, visual or hearing impairments or a combination of disabilities.

Although this Medicaid benefit is not required, all 50 states have at least one facility. Access is limited to Medicaid beneficiaries only. While there will continue to be a need for institutional care for some of the more severely mentally retarded, trends in the treatment of developmental disability and mental retardation are turning towards a greater attempt to keep these individuals in the community living in their own homes.

5.11.6 *Nursing home care*

In 2016 around 1.35 million Americans were residents of nursing homes, around 100 000 less than the number in 1995 (NCHS, 2017). This change is due to the increased use of the alternative long-term care settings already described (Harris-Kojetin et al., 2019; Silver et al., 2018). Despite this downward trend, nursing home care is still a significant part of long-term care services in the United States (Harris-Kojetin et al., 2019).

Nursing facilities are regulated by both state and federal government (Stevenson, 2018). They must be licensed by the state and may additionally receive certification from the CMS. To receive a licence from the state

the nursing home must comply with licensing requirements in that state. Most states establish minimum qualifications for administrators, building standards and safety codes. All states set minimum staffing levels, although these differ from state to state. Nursing homes that receive Medicare and/or Medicaid patients must meet the federal certification standards of the CMS for caring for those patients.

In nursing homes an individual receives all the services that are provided in ALFs plus skilled nursing care. Much of the care is for ADLs (eating, bathing, dressing, toileting, walking or mobility, and transferring in and out of bed), and this is provided by CNAs. In 2016 over 90% of nursing home residents needed help with bathing, dressing and walking/mobility, nearly 90% needed help with toileting and transferring, and nearly 60% needed help with eating (Harris-Kojetin et al., 2019). Many residents take a number of medications, usually administered by an LPN. Residents may receive special diets supervised by a nutritionist, therapies from physical, occupational and respiratory therapists and speech–language pathologists, and counselling from social workers. Activities are arranged for residents who are able to participate.

Through a complex web of personal and public financing, essentially all Americans have the financial ability to receive care in nursing homes. Medicare beneficiaries are covered for a limited number of days of care in a nursing home and must be undergoing rehabilitation to be covered. Medicaid covers care for those who are low income and who have minimal assets. If a family has too many assets to receive Medicaid support, they must use up ('spend down') personal assets first (this does not include a family home and other exclusions). This spending down occurs as families pay for nursing home care out-of-pocket. A private room in a nursing home averages $100 000 a year (Senior Living, 2019) (but varies greatly by geographical location), so it is easy to see why those paying out-of-pocket soon run out of money and then go on Medicaid support. Long-term care (LTC) insurance covers nursing home care but annual premiums are high, so few Americans take out this type of insurance (only 2.5% of the population was covered by LTC insurance in 2014) (AALTCI, 2019).

Nursing homes have experienced problems with quality for several decades. In the past some major issues were inadequate staffing, overuse of restraints and urinary catheters, pressure sores, failure to treat residents with respect, unsanitary food and environment, and malnutrition, among other safety and social issues (Harrington, Carrillo & Blank, 2010).

In response, federal and state governments enacted regulations and certification requirements aimed at improving the quality of care. Policies and survey procedures were strengthened and public reporting of nursing home quality was initiated (Harrington et al., 2018). Federal regulations require nursing facilities to have sufficient nursing staff to maintain the physical, mental and psychosocial well-being of residents. This includes having a registered nurse as a Director of Nursing for at least eight consecutive hours every day, and licensed nurses on site 24 hours every day (Harrington et al., 2016). To be certified to take Medicare or Medicaid recipients nursing homes must meet a number of federal standards with respect to residents' rights, quality of care and the physical environment, among other standards. Since 2016, as part of the ACA, federal requirements expanded to include requirements on person-centred care, care planning, infection control and quality improvement activities (Stevenson, 2018).

Nursing homes are licensed to operate at the state level. States require nursing homes to meet physical, resource and service standards (staffing, sanitation, building codes, etc.) (Harrington et al., 2016; Stevenson, 2018).

States also have the primary responsibility for certifying compliance with both federal and state regulations (Stevenson, 2018). This occurs through regular inspections and investigation of any complaints and adverse incidents. Nursing homes are penalized and certifications can be revoked for poor performance.

State surveyors assess process and outcomes of nursing homes in several areas. Where a facility fails to meet a requirement, a deficiency or citation is given to the facility for that individual requirement. The deficiencies are given for problems that can result in a negative impact on the health and safety of residents. Surveyors also rate each deficiency based on scope and severity for purposes of enforcement. The deficiencies rated as causing actual harm or immediate jeopardy are the most serious.

As a result of these regulations, quality has improved on a number of measures. However, issues remain. In 2016 the most common issues were with failures in infection control (45.4%); food sanitation (42.6%); accident environment (39.8%); quality of care (34.3%); and pharmacy consultation (26.8%) (Harrington et al., 2018).

Currently, for all Medicare/Medicaid certified facilities data are collected for two sets of quality improvement measures: the online survey certification and report (OSCAR), and the minimum data set for nursing

homes (MDS-NH). OSCAR data are obtained by facility self-report and surveyor review and site visit on the average of every 12 months (Werner, Konetzka & Kim, 2013). If facilities do not meet the standards in the required areas they will receive a deficiency citation in that area. Extra surveys are required to check on the progress following a deficiency, when there are changes in a facility's organization and management, and when there has been a complaint. The MDS-NH is resident-level data comprised of resident characteristics and process and quality indicators. Nursing homes that receive Medicare payment must periodically collect and report data on aspects of the residents' physical, mental, emotional, behavioural and social status.

The OSCAR and MDS-NH data are used by Medicare to publicly report quality in nursing homes (Lutfiyya, Gessert & Lipsky, 2013; Werner, Konetzka & Kim, 2013). This is being done through Nursing Home Compare, an online system similar to the Hospital Compare and Home Health Compare systems discussed in previous sections. The website provides comparisons of patient outcomes across nursing homes.

5.12 Palliative care

5.12.1 *Definition and services*

Palliative care is the care of persons for whom there is no hope of recovery from a terminal illness. It entails the relief of pain and other symptoms to make the person comfortable, and psychosocial and spiritual support (NHPCO, 2018). Core values of palliative care are that end-of-life care should be an integral and important part of healthcare and that care should involve the patient and their family and respect their wishes (MedlinePlus, 2018).

For reimbursement purposes, payers make a distinction between palliative and hospice care. Palliative care is any number of treatments that may be given at any time following the diagnosis of a terminal illness (MedlinePlus, 2018). Palliative care may be provided by hospitals, clinics, nursing homes, home care agencies and other healthcare organizations. The care may occur in homes, hospitals and long-term care facilities. Hospice care is a comprehensive set of palliative care services for the terminally ill

who have a life expectancy of months (usually six or less). Hospice care is a set of defined services that fall under specific Medicare regulations.

Hospice care can be provided in the home or in an institutional setting such as a hospital, nursing home or retirement centre. There are also freestanding hospice centres (NHPCO, 2018). In 2017 there were 4515 Medicare-certified hospices in operation, 62% of which were for-profit (NHPCO, 2018). Mean census was 69 patients. All hospice care involves a team of providers: a doctor, nurses, social worker, chaplain, volunteers, home health aides and others.

Hospice services were delivered to 1.49 million Medicare beneficiaries in 2017 (NHPCO, 2019). Common diagnoses for Medicare patients receiving palliative care are cancer (over 50% of hospice patients), circulatory/heart disease, dementia, respiratory disease and stroke (NHPCO, 2018). Patients received 76 days of care on average.

Palliative care and hospice care differ in terms of reimbursement of services. Medicare pays for only some palliative care treatments and medications but all hospice charges (AHF, nd). Medicaid pays for some palliative care and in most states it pays for all hospice charges. The Veterans Administration (VA) also covers hospice care. Private insurance covers some palliative care treatments and many plans also have a hospice benefit.

5.12.2 *Accessibility of palliative care*

Exactly to what extent palliative care is covered by public and private insurance varies, so financial barriers to palliative care cannot be summarized other than to say that they could be significant if not covered by some type of insurance. However, insurance coverage of hospice care is more consistent and transparent. As outlined above, Medicare, Medicaid (in most states), the VA and most private insurance plans cover hospice care, so most individuals with some form of insurance are able to receive hospice care without financial barriers.

Due to the fact that most hospice care is for the elderly, and the elderly are covered by Medicare, the number of uninsured individuals needing hospice care is actually quite small. For the small number of individuals without insurance coverage of hospice services, hospice care may still be available due to the mission of many hospices to provide care regardless of ability to pay (AHF, nd).

Access to palliative care and hospice care requires more than the absence of financial barriers. Other issues that need to be addressed include barriers in rural communities that do not have an adequate supply of palliative care organizations and workforce, educational deficits of patients and differences in cultural values of patients (Lynch, 2012).

5.12.3 *Initiatives to improve palliative care*

Palliative care has made significant headway since the 1997 IOM recommendations for an expansion of palliative care settings, and the development of quality measures, performance monitoring and provider payment that does not restrict access to care (IOM, 2015). Since then, palliative care has grown and strides have been made in the development of clinical guidelines for the quality of palliative care services and of measures based on those guidelines (Ahluwalia et al., 2018; Ferrell et al., 2018). There are also a large number of palliative care assessment tools in existence (Aslakson et al., 2017). But gaps remain in key domains in these tools: few of them assess structural, cultural, spiritual or ethical/legal domains, or patient-reported experience with end-of-life care.

The IOM revisited the status of palliative care in 2015. The committee recognized that much progress in quality had been made, but added the following areas for future work: improving individuals' participation in advance care planning and shared decision-making, and developing quality measures to enable accountability (IOM, 2015).

5.13 Services from informal care-givers

5.13.1 *Definition and services*

Previous sections have discussed the formal (paid) care provided for healthcare services in the United States. Much healthcare, however, is delivered by unpaid, or informal, providers, such as family and friends (AARP, 2015; Reinhard, Levine & Samis, 2012; Reinhard et al., 2015). Informal care reduces the use of formal home healthcare services and delays the entry into a nursing home. Individuals who are fortunate enough to have informal

care-givers tend to remain in the community longer than those who do not. Informal care plays a key role in coordinating different healthcare services and managing transitions between settings such as hospitals and nursing homes (Reinhard, Levine & Samis, 2012). Informal care-giving is also heavily involved in end-of-life (palliative) care (AARP, 2015).

Some type of informal care, including custodial, nursing, transportation, management of care and other services, is provided by 14% of adult Americans and 23% of working Americans (AARP, 2015; Reinhard et al., 2015). A high percentage of care involves help with or complete performance of ADLs, including bathing, dressing, eating, walking or transferring to a wheelchair, transportation and communication (such as phone calls) (AARP, 2015; Reinhard, Levine & Samis, 2012). In some cases, more complex nursing care is required, including administration of medications, dressing changes, wound care, working with equipment and other nursing care. Care-givers are also involved in managing and coordinating formal care.

The amount of informal care-giving in the United States varies from less than a few hours a week to continuous. Care-givers provide care 24.4 hours a week on average (AARP, 2015). Nearly one quarter provide 41 or more hours of care a week. The duration of care on average is four years, while 25% of care-giving lasts for five years or more (AARP, 2015).

Informal care involves a large amount of assistance that used to be provided by paid care-givers. Shorter hospital stays and cutbacks in home care funding have left more healthcare services to be provided on an unpaid basis (Reinhard, Levine & Samis, 2012). Informal care thus creates much value. Based on 40 million care-givers providing an average of 18 hours of care per week, at an average value of $12.51 per hour, estimates of the economic value of informal care-giving are $470 billion per year (Reinhard et al., 2015).

5.13.2 *Accessibility, adequacy and quality of informal care-givers*

Access to informal care is dependent on individual relationships and situations. Unpaid informal care usually comes from family, friends or the social and religious affiliations of the person needing care. Without such resources, the individual or their advocates will need to seek formal, paid care. There will most likely be an insufficient supply of informal care-givers in the future due to the 'baby boom' generation entering old age and

an increase in the number of elderly who are divorced, unmarried and/or without children.

The quality of informal care is directly related to the care-giver's level of knowledge and skills concerning the care, and the ability of the care-giver to handle the stresses involved in care-giving. Informal care-givers often have no formal training and do not have to acquire certifications or licences to perform their care. They may learn their skills by trial-and-error, or through some hospital or home care instruction (Bee, Barnes & Luker, 2009), and may feel that they are not given adequate training (Bee, Barnes & Luker, 2009).

Informal care-givers also have to deal with financial, emotional, physical and social difficulties (AARP, 2015; Reinhard, Levine & Samis, 2012; Reinhard et al., 2015). They often face financial challenges due to medical and custodial costs for the person they are caring for. Emotional issues include anger, guilt, dissatisfaction and family conflict. Physically the work can be very demanding and exhausting and can even result in injuries. The care-givers themselves may be elderly or ill. Isolation from friends and community may occur due to care-giving demands. As a result of all these issues, burnout can occur, and this can affect the quality of care provided.

Due to these factors, informal care is performed with varying degrees of quality. Furthermore, there is no monitoring of the care. Often, the only knowledge of poor quality of care comes when the individual is seen by formal care-givers, who spot the issues. At that time, the individual may have sustained injuries or illness due to improper or inadequate care.

5.13.3 *Initiatives to improve informal care-giving*

Informal care-givers need educational, financial, physical, emotional and social support. One in four care-givers say it is very difficult to get affordable services, such as transportation, financial or respite care, that would help with their care (AARP, 2015).

Educational classes and instruction in the home would improve knowledge and skills (AARP, 2015). Hospital, home care agencies and nursing homes help in the skills training of informal care-givers by providing education and training when care recipients enter those institutions for care (Bee, Barnes & Luker, 2009), but a number of care-givers report needing more information and training (AARP, 2015).

Care-givers report that tax credits, getting paid for their services and/or partial paid leave from work would help their financial situation and reduce stress (AARP, 2015). They also support a policy proposal of banning workplace discrimination against workers with care-giving responsibilities (AARP, 2015).

Access to respite services helps informal care-givers with their physical, emotional and social issues (AARP, 2015; Reinhard et al., 2015). Respite care is any type of care that relieves informal care-givers of their duties for a (usually short) period of time. This gives informal care-givers a chance to take a break and 'recharge their batteries'. The respite care can be more informal care, such as may be offered by a church, or formal care, such as adult day care, home health care or temporary institutionalization. Financial barriers may limit access to formal respite care.

5.14 Racial and ethnic minorities, low-income individuals, the uninsured and other vulnerable populations

Discussion regarding the health and healthcare issues of racial and ethnic minorities, low-income individuals and the uninsured is combined because these populations frequently overlap. Many individuals who are low income are also uninsured, and many low-income and uninsured individuals belong to racial and ethnic minorities. Programmes for improvement often address all these populations simultaneously. There are, of course, separate issues within each population. Racial and ethnic minorities, for example, face discrimination and healthcare treatment that is different from that of non-minorities (Cogburn, 2019). When overlaps occur, there are numerous social, cultural, economic and structural barriers to accessing quality healthcare and to being in good health.

The demographics of race, ethnicity, low income and lack of insurance in the United States are briefly as follows: in 2018 racial and ethnic minorities were around 40% of the US population: 13.4% were Black or African American, 18.3% were Hispanic, 5.9% were Asian and 2.4% were other minority races and ethnicities (US Census Bureau, 2018). Nearly 12% of the US population was in official poverty in 2018, a percentage that decreased since 2014 (Semega et al., 2019). The official poverty statistic must be interpreted with caution since the threshold set by the US government has

been criticized for being too low (Haveman et al., 2015). Even so, estimates based on this measure place one third of Americans near poverty (Haymes, Haymes & Miller, 2015). In addition, income and wealth disparities have become large. In 2017 earners in the highest income quintile made over half of all income compared to the lowest quintile which made only 3% (Semega et al., 2019). In comparison to other OECD countries in 2017 the United States had the third highest income Gini coefficient (OECD, 2017). Over 14% of the population aged 18–64 had no health insurance in 2018 and 45% were underinsured (Collins, Bhupal & Doty, 2019; Witters, 2019).

Examining the interconnections between these demographics we find that those with low incomes are more likely to be uninsured than those with higher incomes (Burtless & Svaton, 2010). Blacks and Hispanics are more likely to have a low income than Whites (Akee, Jones, & Porter, 2019; DeNavas-Walt, & Procto, 2015) and less likely to have health insurance (Health Affairs Health Policy Brief, 2018; US Census Bureau, 2016a). The health of racial and ethnic minorities is generally poorer than that of Whites (Cogburn, 2019), the health of low-income persons is poorer than that of persons with higher incomes (Chetty et al., 2016), and the health of those without insurance is poorer than that of the insured (Sommers, Long & Baicker, 2014; Wilper et al., 2009). Income-based health disparities in the United States are among the highest in the world, as poor adults are five times as likely to report being in poor or fair health than those >400% above the poverty level (Health Affairs Health Policy Brief, 2018).

Healthcare contributes to health disparities in terms of both access to care and the quality of care (AHRQ, 2018; Richardson & Norris, 2010). Disparities in access to care are more than just financial barriers, such as lack of insurance, but also include geographical, provider and cultural barriers (AHRQ, 2018; Richardson & Norris, 2010). While it is clear that those with low income and lack of insurance will have difficulty with access to healthcare, racial and ethnic minorities experience disparities in access to healthcare that cannot be explained by income and insurance status (AHRQ, 2018; Cogburn, 2019).

Research indicates that racial and ethnic minorities may receive poorer quality of care than Whites in the United States (AHRQ, 2020; Bristow et al., 2013; Hassett et al., 2016; Rodriguez et al., 2011; Schwamm et al., 2010). Discrimination appears to play a role (Benjamins & Middleton, 2019; Cykert et al., 2017; Perez et al., 2009; Sorkin, Ngo-Metzger & De Alba, 2010). In addition, there is also evidence that having insurance, as well as

the type of insurance one has, is related to the care received in hospitals (Bristow et al., 2013; Hassett et al., 2016; Spencer, Gaskin & Roberts, 2012).

Federal, state and private agencies have worked at reducing disparities in health and healthcare for these populations for a number of years. At the federal level, as mentioned earlier, the ACA has improved access to care for low-income and uninsured individuals. Improvement is being accomplished through expansion of Medicaid, individual health insurance through the ACA marketplaces and, community health centres, emphasis on patient-centred medical homes, support to build the professional healthcare workforce, and other measures.

Despite the advances under way with the ACA, more remains to be done. Some federal programmes tasked with reducing health disparities are the National Center on Minority Health and Health Disparities (NCMHD), a part of the National Institutes of Health, the AHRQ and the HRSA (Anderson, 2012; HRSA, 2018). Through its research programmes and activities on health disparities, the NCMHD brings national attention to the issue (Anderson, 2012). An online resource run by the NCMHD – HDPulse – provides a portal that enables public health professionals and researchers to access data, published reports and public use files related to health disparities and access.

The AHRQ publishes a bi-annual National Healthcare Disparities Report on the state of healthcare disparities in the United States and opportunities for reducing them (AHRQ, 2018). Effectiveness of care, patient safety, timeliness, patient-centredness, efficiency and access to care are assessed. The 2018 report found that some disparities had lessened, but some persist, especially for the poor and uninsured. Quality measures were 40% worse for Blacks and 33% worse for Hispanics than for Whites.

The HRSA supports multiple programmes at national, state and local levels to reduce health disparities. These include initiatives in maternal and child health, primary healthcare access and quality, HIV/AIDS, the health workforce, and rural/urban and geographic disparities.

Other vulnerable populations in the United States include the disabled, the homeless, women, children, persons with HIV/AIDS, the mentally ill, the elderly and those living in rural areas. Federal, state and private agencies have programmes for reducing disparities in health and healthcare for these populations. Populations that have special access to health services include Native Americans and Alaska Natives, military personnel, veterans and those who are institutionalized, such as prisoners.

6

Principal health reforms

Chapter summary

- The Patient Protection and Affordable Care Act (ACA) of 2010 is generally thought to be the most significant health reform in the United States since Medicare. Over the years since its adoption, it has come to be accepted by a small majority in the USA.

- The Trump Administration adopted measures, mainly through executive action, to weaken the ACA, although it was not been successful in keeping its promise to repeal it in its entirety.

- The courts, including the Supreme Court, have been called to rule on several point within the ACA and new legal challenges are likely to emerge in the future.

- The absence of a robust public insurance plan to compete with the private sector insurers may have contributed to less than adequate competition in the health insurance market.

- The number of individuals remaining uninsured – about 10% of the US population – may require attention in the future as premiums rise and more people take advantage of the repeal of the penalty attached to the individual mandate.

6.1 History of US health reforms

Efforts to reform the health system in the United States date back several decades. These efforts are reviewed in Section 2.1 and Box 2.2. In many ways the ACA represents the next step in a process that began with the passage of Medicare (public insurance mostly for the elderly) and Medicaid (public insurance for some of the poor) in 1965.

6.1.1 *Aims, objectives and goals of the ACA*

The ACA reflected the broad public goals of the Obama Administration and the Democrats in Congress who passed this legislation. Any broad consensus as to goals disguised deep divisions within society as to how those goals could best be achieved. Testimony to this was the election of Donald Trump with his campaign promise to repeal the ACA.

At the time that the ACA was being formulated uninsurance was a major problem in the United States. About 44 million people (15% of the population) were uninsured, 56 million (19%) had been uninsured for at least part of the year and 32 million (11%) had been uninsured for more than a year (Cohen &d Martinez, 2007; Connors & Gostin, 2010). An additional 41 million people were estimated to be underinsured (Commonwealth Fund, 2017). To increase access the ACA included both private and public insurance. To lower the uninsured rate an individual mandate requiring that nearly everyone have health insurance was included, with government premium subsidies for low- and middle-income uninsured individuals and families who were ineligible for Medicaid or employer-sponsored insurance. Guaranteed issue (requiring insurers to sell policies to all who wished to buy them, including those with pre-existing conditions) and community rating were also adopted to reduce the percentage uninsured (exceptions are explained below). To address underinsurance, problems of access were managed by setting up required health benefits for insurance policies, an end to cancellation of insurance when a recipient became ill and made claims, an end to pre-existing conditions limitations in insurance policies, and the elimination of lifetime maximum pay-outs on insurance claims (Reuters, 2010).

A second goal of the ACA was to reduce the overall cost and/or the rate of increase in healthcare costs, and to decrease the already large US fiscal deficit. (Oberlander, 2011).

Finally, improving quality of healthcare was a focus of the ACA (Schoenbaum et al., 2011; Nolte & McKee, 2012). Geographical variations in healthcare costs and practice differences across the United States raised the question of what is 'best practice' and what is appropriate healthcare (Schoenbaum et al., 2011). The belief that as much as 30% of healthcare did not improve patient health fuelled calls for both cost savings and quality improvement (IOM, 2010; Gabow, Halvorson & Kaplan, 2012).

6.1.2 *Background and underlying issues in health policy reform*

This section examines the context of US health reform legislation: its history, the culture, the divided policy environment, and institutional structures (including federalism).

The political culture of the United States influenced the content of President Obama's ACA and President Trump's health policies. In the United States, as is the case in many other countries, there is reliance on market competition and on entrepreneurship (Page & Jacobs, 2009). Individual rights and personal responsibility play an important role in US political values. This meant that many of the ACA's goals had to be accomplished with a 'limited increase in federal governing authority' (Morgan & Campbell, 2011, p. 387). And for many in the Trump Administration, even the pro-competition, private sector aspects of the ACA were not reassuring. They remained suspicious of the role assigned by the ACA to government regulation (Eilperin, 2017).

Healthcare reform over the last decade occurred at a time when political partisanship was at historic highs (Galston, 2010; Murray & O'Connor, 2013). Policy differences between the Republicans and the Democrats elected to Congress were greater than at any other time since the 1880s (McCarty, Poole & Rosenthal, 2008). Substantial political differences also existed within each political party (Marsh et al., 2012a, 2012b). Thus, constant negotiation and renegotiation on the content of the ACA legislation was required within the majority party, at that time the Democrats, before it was adopted.

While the Democratic Party was the majority party in both houses of Congress, its margin of control in the Senate was narrow because of the need to have a 'super majority' of 60 out of 100 seats to ensure the passage of contentious legislation in that chamber (Morgan & Campbell, 2011). By the end of 2009, both the House of Representatives and the Senate had adopted healthcare reform bills, albeit different versions. In January 2010, however, the Democratic Party lost a special election held in Massachusetts for a Senate seat, leaving Obama's party in the Senate one vote short of the 60 needed to finalize the bill by a straightforward vote. In the end, the Democratic leadership in Congress employed a legislative mechanism called 'reconciliation', generally reserved for budget legislation and requiring only 51 votes, to pass the final bill (Goodnough & Sack, 2011).

Counterbalancing this was that President Obama had a great deal of political capital due to his margin of victory in the 2008 election.

During President Trump's first years in office, beginning in January 2016, the Republican Party held a clear majority in Congress in both the Senate and the House of Representatives. This should have facilitated the implementation of his health policies. But reforming the health system proved difficult because of political divisions within the Republican party and the failure of the congressional Republicans to formulate a convincing replacement of their own.

The Trump Administration's attempts to repeal the ACA failed because it was unable to mobilize adequate congressional support. In response, it then turned to approaches to modify the ACA and reduce its scope that are available only to a president and do not require congressional approval. These include executive orders, which have the force of law in many cases, presidential proclamations, presidential memoranda, presidential decision directives, and 'statements' that accompany legislation when it is signed into law. In addition, these methods had the advantage of preserving the revenue accruing from the taxes that were embedded in the ACA. If the ACA had been completely repealed, the federal government would have lost this revenue.

Finally, US political structures posed an obstacle for healthcare reform legislation for both the Obama and Trump Administrations. In the US political system, with its separation of powers, it is very difficult to adopt comprehensive, cohesively formulated policy programmes such as those more

commonly observed in parliamentary systems of government (Rice & Unruh 2016, ch. 12). Historically in the United States each elected legislator could be independent of their party on any given issue and the system tended to be more open to stakeholder influence than in a parliamentary system (Rosenau, 1994). But over the years and by 2008 parties had evolved to become more centralized and cohesive.

Researchers point to constraints on healthcare reform legislation and the ACA bears out the findings (Volden & Wiseman, 2011). As an institution, Congress is subject to enormous outside influence because it is complex, and made up of two chambers, many committees and even more subcommittees. Evidence also suggests that health policy legislation needs the strong support of the majority party and its congressional leadership to be adopted. It is not the case that moderate and bipartisan approaches to health policy in Congress are more successful. The ACA did not have a single Republican vote, but it was still enacted. Similarly, efforts to repeal it subsequently did not garner a single Democratic vote in the Senate. Historically, health policy legislation is more likely than policy proposals in other issue sectors to end up in Congressional gridlock (Volden & Wiseman, 2011).

6.1.3 *The policy process*

HOW THE CONTENT OF THE ACA WAS DEVELOPED

The ACA is an enormous piece of legislation and it has transformed the US health system. This section considers how the content of the legislation was developed by key actors in the policy-making process: the president, Congress, the Supreme Court, stakeholders and the states. It outlines President Trump's process to amend the ACA. In the United States the president and Congress can both formulate legislation. They shared significant roles in the development of the ACA, as did the two main political parties. Stakeholders also played an important role in the development of the bill, including healthcare providers, pharmaceutical manufacturers, insurers, businesses and the states.

KEY ACTORS: THE PRESIDENT, CONGRESS AND THE PARTIES

A president's role is critical in the United States, but presidents vary as to the success with which they use their authority and influence. In matters of domestic legislation, such as healthcare, the president's influence is more limited than in foreign policy (Neustadt, 1991). The president is not like a prime minister who can order the governing coalition in parliament to vote for legislation. A winning coalition in the US Senate or House of Representatives must be negotiated for each piece of legislation. Each party is a diverse collection of interests with substantial internal diversity (Marsh et al., 2012a, 2012b). This means that support of the Congressional leadership of the majority party in the Senate and House of Representatives is critical, though not sufficient, in gathering enough members partly to achieve a winning coalition on any piece of legislation (Volden & Wiseman, 2011; Stolberg & Pear, 2019).

President Obama's strategy in moving forward with health reform after his election in 2008 was influenced by former President Clinton's failed attempt at healthcare reform in 1993, which many believe was unsuccessful because the Clinton White House did not involve Congress in drafting the legislation until late in the process (Brown, 2011). Learning from that experience, President Obama encouraged Congress to take the lead in 2009 and simultaneously ensured that stakeholders with vested interests in healthcare reform did not sabotage the effort. This meant allowing Congress to formulate the legislation at the same time as he offered stakeholders incentives to stay committed. The Democrats attempted to secure a few Republican votes for the legislation so that it could be designated as bipartisan, but their efforts failed.

As mentioned above (Section 6.1.2), in early January 2010 there were two different health reform bills before Congress but with the Democrats being one vote short in the Senate to pass their bill, the House had to adopt the Senate version and use the special legislative mechanism of 'reconciliation' to pass the ACA.

THE SUPREME COURT

The Supreme Court is the 'referee' in the US political system. One of its main roles is to judge the constitutionality of final legislation once it is adopted. In November 2011 the Supreme Court announced that it would hear challenges to the ACA brought by a majority of the states (Bravin, 2011; Liptak, 2011). The court agreed to rule on the constitutionality of some aspects of the legislation, including the individual mandate and the Medicaid expansion (Baker, 2011b). The Attorneys General of the suing states argued that Congress exceeded its power by requiring that states respect the more comprehensive federal eligibility standards, or they would lose federal government matching funds for their entire Medicaid programme. The states argued that this violated their sovereignty under the Constitution (Abelson, Harris & Pear, 2011).

In June 2012 the Supreme Court held that the ACA was largely constitutional. The individual mandate requiring most individuals to possess public or private health insurance coverage or pay a penalty was upheld, the reasoning being that Congress has the authority to implement taxes. However, the court argued that in the case of Medicaid expansion, 'Congress could not constitutionally force the states to implement a new program under the threat of losing existing program funding' (Jost & Rosenbaum, 2012; Supreme Court of the United States, 2012). Technically the decision did not strike down the Medicaid expansion but instead prevented the HHS from requiring that states participate in it. This left the participation in Medicaid expansion effectively optional for each state. However, many incentives remained for states to expand Medicaid as explained in Section 6.2.2., including federal subsidies of 90% of the costs. Failure to expand Medicaid could negatively affect state budgets and increase the cost of uncompensated care for states. It would reduce the multiplier effect of federal funds flowing into a state's economy (Musumeci, 2012). Nevertheless, at the end of 2020, 14 states had not expanded Medicaid.

In addition, the Supreme Court's two major decisions about the law had the effect of making it virtually impossible for many people with incomes below 100% of the poverty level who live in states that don't fully participate in the Medicaid expansion to obtain health insurance at a price they could afford.

The Supreme Court took on the abortion issue in 2018–2019[12]. It prohibited insurers from using funds from federal agencies to pay for abortion except in cases of rape, incest or when the mother's life is in danger. But it ruled that customers could purchase separate abortion coverage and that funds for such coverage must be held separate from other insurance company funds (Cornell Law School, 2020; Sobel, Salganicoff & Ramaswamy, 2020).

The Supreme Court sided (8–1) with insurers, ruling that risk corridor payments were constitutional. Risk corridor payments, which were in effect from 2014 to 2016, limited losses and gains by insurers beyond an allowable range. They were included in the ACA legislation but Congress had not funded them. The decision in the case of *Maine Community Health Options v.* United States awarded $12 billion to be given to the insurers and stated that the government had to make the promised payments indicated in the ACA legislation. Even the liberal judges on the Supreme Court agreed that 'the government should honor its obligations' (Keith, 2020).

The Supreme Court will continue to influence the development of the ACA. Currently pending is a case, *California v. Texas*, that questions the constitutionality of the ACA again. Those states supporting Texas seek to have the whole of the ACA struck down. 'The Supreme Court has agreed to review three legal questions in the case: (a) whether Texas and the individual plaintiffs have standing to bring the lawsuit to challenge the individual mandate; (b) whether [recent tax legislation] rendered the individual mandate unconstitutional; and (c) if the mandate is unconstitutional, whether the rest of the ACA can survive.' A decision by the Supreme Court is not expected until after the November 2020 presidential and congressional elections (Musumeci, 2020).

STAKEHOLDERS AND THEIR INPUT

The US healthcare system accounts for nearly 18% of the economy and the amount of money involved in stakeholder lobbying of Congress is not trivial. In 2016 alone, half a billion dollars was spent on lobbying by pharmaceutical companies, hospitals and health providers making the largest contributions (Khullar, 2017). Not surprisingly then, many

12 President Trump has named two new justices to the Supreme Court since his election, Neil Gorsuch and Brett Kavanaugh. Future legal cases regarding the ACA that are taken to the Supreme Court will be assessed by a Supreme Court with a more conservative bent.

nongovernmental stakeholders affected by the ACA were involved in its development. Healthcare providers were 'at the table' negotiating the content of the ACA (Hacker, 2011). Physician groups were split, which handicapped them (Quadagno, 2011). Conservative state physician associations such as the Texas Medical Association and the left-of-centre Physicians for a National Health Program opposed the ACA for different reasons. But the influential American Medical Association provided limited support at first, later opposing some points, but in the end endorsed both the Senate and the House bills (Hacker, 2011). Physician groups hoped for relief from a restrictive provision on Medicare physician fee schedule prices and sought other revenue-enhancing provisions.

The American Hospital Association, the Federation of American Hospitals and the Catholic Health Association agreed to accept $155 billion less in Medicare payments for a period of 10 years. In exchange they expected an increase in revenues of around $171 billion because many more Americans would have insurance and charity care would be reduced (Jacobs & Skocpol, 2010, pp. 70–1). Hospitals agreed to a gradual reduction of $50 billion in government payments for treating the uninsured. They also agreed to changes that would reduce federal payments for avoidable and inappropriate hospital patient readmissions by about $2 billion. Finally, a lower Medicare payment update to hospitals and other payment cuts were projected to yield $103 billion in savings to the government (Terry, 2009).

Pharmaceutical manufacturers received the assurance that they would not be closely regulated by the government. There would be no price controls on drugs, such as those in effect in most other high-income countries. As requested by the pharmaceutical manufacturing sector, the ACA also prohibited US residents from buying and importing medication from other countries where drugs are less expensive. The volume of drugs sold was expected to increase among the working age population because of the insurance expansions of the ACA, and among seniors due to more complete coverage under Part D of Medicare. To obtain these benefits the pharmaceutical manufacturers gave up roughly $85 billion in revenue. In return they could look forward to 'tens of billions of dollars in additional revenue as more people with insurance visit doctors and fill prescriptions' (Abelson, 2010). In the end the pharmaceutical sector accepted the ACA and put around $100 million into advertising to support its passage (Jacobs & Skocpol, 2010, pp. 70–1).

Insurers, represented by America's Health Insurance Plans, vacillated, but they did not actively oppose the healthcare reform legislation as they had in 1993. In exchange for accepting greater government regulation, they received an assurance that nearly everyone would be required to purchase insurance as a protection against adverse selection. They were also guaranteed that there would be no competition from a public-sector insurance plan. When the Trump Administration proposed to eliminate the individual mandate, with the cooperation of Republicans in Congress, it was strongly opposed by many within the health insurance industry, where it was viewed as reneging on the agreement they had negotiated with the Obama Administration at the time the ACA was adopted.

The new regulations that the insurance companies had agreed to were significant in the US context: some price controls, guaranteed issue (selling insurance to all who sought to buy it even if the individual had pre-existing conditions), modified community rating, and the requirement that insurers generally spend 80–85% of premiums on patient care (called a medical loss ratio (MLR)) (Quadagno, 2011).

The business community was divided. Small business interests were united in their opposition to the ACA. Large employers that self-insured were exempted from many of the ACA regulations (Pecquet & Baker, 2011; Linehan, 2010). These and other employers received 'grandfathering' status for their health plans if they did not make important changes to what was in place in their plans at the time the ACA was adopted. But starting in 2015 the ACA imposed a penalty of $2260 per employee on employers with more than 50 employees if they did not provide adequate health insurance for 95% of their employees. The Trump Administration attempted to remove this obligation, called the Employer Shared Responsibility Provision (ESRP), and the penalty through executive orders, but in 2017 the Internal Revenue Service announced that it would continue to be enforced, as only Congress can modify laws, including the ACA (Cowley, 2017). As a result, this employer mandate was still in effect as of the end of 2020.

STATES AS STAKEHOLDERS

States are also stakeholders and they too participated in the formulation of the health reform legislation. But the interests of the 50 states are diverse. Some were led by Republican governors while others were led by Democrats.

Some states such as Massachusetts and Vermont already had high-performing health systems (as defined by dozens of empirical indicators), while others did not (Commonwealth Fund, 2007; Radley McCarthy & Hayes, 2018; Silow-Carroll & Moody, 2011). The states did not all agree on the goals that the ACA sought to achieve, such as increased access to insurance. Some states took their cases against the ACA to the Supreme Court and won when Medicaid expansion was made optional.

PUBLIC INVOLVEMENT IN DEVELOPING THE ACA

The role of the public in determining the content of the ACA was less decisive than that of other stakeholders (Cook, 2011). Public interest in healthcare legislation was high while it was under consideration and the media focused on it (Jacobs & Skocpol, 2010). Overall support for the ACA remained below 50% in 2012 with 41% of Americans favourable to it and 41% unfavourable (Kaiser Health Tracking Poll, 2012). Over the years public support only occasionally reached 50% or higher. But by May 2020, 51% were favourable and 41% were unfavourable according to the Kaiser Family Foundation's Health Tracking Poll. It was supported by 80% of Democrats, 55% of independents, but only 19% of Republicans (Kaiser Family Foundation, 2020b).

From the beginning public approval of a few specific elements in the ACA was quite high – for example requiring insurance companies to sell insurance to everyone, including those with pre-existing medical conditions. Much of the public was, however, set against the idea of the individual mandate (Kaiser Family Foundation, 2011c).

6.2 The Affordable Care Act

The adoption of the Patient Protection and Affordable Care Act (ACA) in the United States in 2010 was a major accomplishment after decades of failed attempts. The scope of those accomplishments is outlined below and notable limitations of the ACA are also discussed. In short, access to insurance for many has improved since the ACA became law, especially those already ill and those for whom costs are prohibitive. Increased consumer protections, through regulation of the health insurance industry, was one of the most

important accomplishments of the ACA, though in 2017–2018, the Trump Administration weakened or eliminated some of these regulations.

The ACA did not accomplish all that many of its proponents wished: implementation was delayed and many were left uninsured (some of those with low income, many undocumented immigrants, those who are eligible but did not enrol, those who preferred to pay a penalty rather than buy insurance, those who would have to pay more than 8% of their income to purchase insurance, and some individuals with religious objections). In states that did not choose to expand Medicaid, many very poor people remained without health insurance. Administrators were not empowered to enforce some important elements of the law, as explained below. The absence of a public insurer precluded competition between the public sector and for-profit and private (mostly for-profit) sectors in the individual insurance market. A long-term care benefit failed to be implemented even though it was included in the legislation. Many potential mechanisms to control costs were not included.

6.2.1 *Major characteristics of the ACA*

This section examines how the ACA achieved increased access. It did so through two primary mechanisms, a combination of new and already existing insurance arrangements: (1) a mandate to possess insurance or to purchase it through ACA marketplaces; and (2) Medicaid expansion in many states. Low-income Americans benefited most because starting in 2014 they received Medicaid coverage if they lived in a state where Medicaid expansion went forward. Others in this group received subsidies for purchasing private insurance. The poor living in states that did not expand Medicaid did not benefit from either of these two mechanisms, however.

The section also examines claims by proponents that the ACA was designed to control rising healthcare costs and reduce the national deficit. These measures included greater regulation of insurance pricing, increased competition to lower the price of insurance through the ACA marketplaces, reform of payments to Medicare, bundled payment systems and the potential for future implementation of the results of several pilot projects. Also reviewed are the policy strategies in the ACA expected to pay for health system reform.

The ACA included quality improvement measures that are discussed below. Improved medical care may result from the ACA's emphasis on primary care and Accountable Care Organizations (ACOs) (CMS, 2019a). The use of comparative effectiveness (although not cost-effectiveness) information was encouraged. Incentive systems in some programmes and pilot research projects attempted to link quality to outcomes. More information on the best medical care available has been made public and transparency has been encouraged.

In addition, the ACA's potential impact outside the health sector is reviewed here. This includes the reduction of job-lock, reduction of bankruptcy due to healthcare bills, reviews of insurance company proposals to increase premiums, and consumer protections.

6.2.2 *ACA implementation*

IMPLEMENTATION

While most major provisions of the ACA went into effect in 2014, several began earlier. One provision enabled 3.1 million young adults to be insured by permitting them to remain on their parents' health insurance until the age of 26. Insurance companies could no longer refuse health insurance to those with pre-existing conditions and minimum loss ratio (MLR) limits restricted the amount that insurers spent on administration, marketing and profits. The Medicare and commercial populations received free preventive benefits without co-payments, and gaps in their medication insurance for Medicare beneficiaries were to be gradually closed. There were tax credits available to many small employers and small businesses with lower-income employees to encourage them to offer insurance for their employees (Tolbert, 2010). Comparative effectiveness research was funded and grants for research on innovations on the topics of payments, delivery and organization of healthcare were distributed. Many consumer protections were put in place, including the external review of appeals of health insurance company decisions about coverage. A centralized website to provide consumer information was established. Some states received federal funds to offer consumer assistance in choosing an insurance plan (Kaiser Family Foundation, 2011a).

More recently, the Trump Administration's health policies removed or modified several of these health reform elements. These are discussed below. Funds for assisting consumers to select a health policy have been sharply reduced. The time period for enrolling in a health plan in the marketplaces was reduced from 92 days to 45 days (Investopedia, 2018).

ACCESS

The ACA requires health insurers to sell policies to all those seeking to purchase them (guaranteed issue) at a fixed rate for each age category, tobacco use status, within a specific family size and within a regional area (community rating). The most significant of these is the one regarding age, where the legislation required that premiums charged to older adults be no more than three times those of younger adults. Discrimination based on gender or health status (an individual's health history) is not allowed for plans sold on the ACA insurance markets. An annual ceiling of approximately $7900 for out-of-pocket (OOP) costs (deductibles, co-payments and coinsurance) for individuals and $15 800 for families was also required by the ACA in 2019. In 2014 minimum standards as to what must be included in all health insurance plans went into effect, addressing the problem of the 'underinsured' – those with less than adequate coverage (Commonwealth Fund, 2010a). States had an important role in setting up and implementing these standards.

President Trump's 2018 executive orders allowing the sale of 'short-term' insurance lasting up to three years without any restrictions on what must be covered will circumvent some of these rules. These short-term policies are expected to attract mainly healthy individuals, thus increasing the cost of health insurance for those continuing to purchase plans on the ACA marketplaces. These are discussed more below.

The ACA included a mandate that every resident must have health insurance starting in 2014. There were exemptions for those with moral or religious objections, for American Indians, for undocumented immigrants, for those in prison, for those who can prove that the lowest cost plan option exceeds 8% of their income, for those whose income is so low that they are not required to file a tax return, and for the very poor residing in states that do not expand Medicaid (Kaiser Family Foundation, 2011a).

Removal of the penalty by Congress in 2017 could undermine the risk pool of the healthcare marketplaces where individual policies are sold. Most of those choosing, legally and without penalty, to forgo health insurance are expected to be healthy and younger than the general population. Therefore, the cost of insurance for those remaining in the purchasing pool will be higher as they are likely to be sicker and older than those who opt out for whatever reason.

The Supreme Court's decision in 2012 made Medicaid expansion optional and some states have opted out of the Medicaid expansion, arguing that they could not afford it. A range of options was available to states. There was no deadline for states to make choices about Medicaid expansion and some did so at a later date, though they did not receive the full array of financial incentives offered to states that expanded Medicaid early on. To date, 37 states (including Washington, DC) have adopted the Medicaid expansion and 14 states have not adopted the expansion (Kaiser Family Foundation, 2019a).

Because the funding for expansion was largely the responsibility of the federal government, states had an incentive to participate. 'Specifically, for people who become newly eligible for Medicaid under the expansion, the federal government will cover 100% of those costs from 2014 through 2016 and a share declining to 90% of the costs in 2020 and thereafter' (CBO, 2012b, p. 9).

It is not entirely certain how much the Supreme Court's 2012 decision to not require states to expand Medicaid is reducing access to health insurance for the poor (CBO, 2012a). While many of the poorest individuals live in states that have not expanded Medicaid, many of those with incomes below 100% of the federal poverty level (FPL) remained uninsured and cannot receive federal subsidies when purchasing coverage in the ACA's insurance marketplaces. However, those with incomes above 100% of the FPL met the requirements for purchasing insurance on the ACA markets with substantial federal subsidies (CBO, 2012b, p. 11). Individuals were also exempt from purchasing insurance for other reasons, as outlined above.

Most people in the United States obtain health insurance through their employer and this continued after the ACA was adopted. Employers with 50 or more full-time employees who did not offer insurance were obliged to pay a penalty. The same was true if coverage did not meet state standards, if it was too expensive for employees to afford or if employers asked new employees to wait more than 60 days for coverage to begin (Tolbert, 2010). Some

employers with fewer than 50 employees received special tax deductions for offering health insurance, but even if they did not offer it, they were exempt from penalties.

The ACA included the mandatory creation of state health insurance marketplaces – online markets where insurers compete to sell state and/or federally compliant policies to individuals and small businesses. If states chose not to implement an ACA marketplace, the federal government was mandated to step in and make a federal ACA marketplace available to the residents of these states. Up to half the states allowed the federal government to administer these ACA marketplaces for them. Several states worked out a partnership with the federal government to organize and implement an ACA marketplace (Mercer, 2013). States were permitted to alter these decisions and to take over the responsibility at any time in the future.

The ACA included sliding scale premium subsidies for individuals and families with incomes between 138% and 400% of the federal poverty level to help them purchase insurance through these marketplaces. Most individuals making between $14 856 and $44 680 in 2012, and families with incomes between $30 657 and $92 200 were eligible for subsidized premiums. The dollar amount differed depending on the family size because the FPL is family-size dependent.

The ACA expanded access to primary care by increasing funds for local clinics and Federally Qualified Health Centers (FQHC) (Abrams et al., 2011). Close to $11 billion was originally anticipated for these programmes but this was reduced by Congress. In early 2018 Congress adopted the Bipartisan Budget Act of 2018 and President Trump signed this law. It reduced funding for the FQHCs to a total of $7.8 billion for fiscal years 2018 and 2019 (Waters & Little, 2018).

COST CONTROLS AND DEFICIT REDUCTION MECHANISMS

The financial impact of the ACA was fiercely disputed from the beginning. Opponents argued it would cost too much and cause many employers to drop employee insurance coverage, preferring to pay the penalty. Proponents contended it would be revenue neutral or the rate of increase in national health expenditures would slow (Cutler, Davis & Stremikis, 2009). The Congressional Budget Office estimated that an overall reduction in the US deficit would result from the passage of the ACA (CBO, 2010a, 2010b).

One of the major concerns regarding the financial impact was that it would increase the price of premiums. There are various ways to measure this. A common way is to examine changes in premiums in the average 'benchmark' plan, which is defined below as the second-lowest Silver plan in each county (weighted by enrolment). While average premium increases vary year to year, overall marketplace premiums increased considerably, by 75%, between 2014 and 2019 (Kaiser Family Foundation, 2019d).

There were, however, wide variations across the states because pricing decisions are made by insurers, for the most part, at the state level. In 2019, for example, premiums dropped 26% in Tennessee but went up 16% in Delaware. The full effect of President Trump's executive orders on health insurance, as well as repeal of the individual penalty for not purchasing insurance, will not be known for some time.

Items in the ACA intended to protect against increases in the national deficit include productivity improvement incentives, reductions in subsidies to Medicare Advantage programmes (described in Chapter 3) (Biles, Arnold & Guterman, 2011), and penalties paid by hospitals for poor performance (e.g. inappropriate readmissions) and by large employers who fail to provide workers with adequate insurance. To reduce costs, the law also includes bundled hospital payment systems (explained below), and revenue from a surtax imposed on unearned investment income on wealthy taxpayers. Finally, other financing mechanisms in the law include a 40% excise tax (the 'Cadillac tax') on high-premium insurance plans typically characterized by low or no deductibles and co-payments (now repealed); health industry fees; rate reviews; and increased Medicare payroll taxes for the wealthy (CBO, 2010b).

The bundled payments for care improvement initiative in the ACA is another policy intended to control costs. It is voluntary and offers physicians, hospitals and other providers a single payment to cover all medical services required to care for a patient for a specific episode of illness (a specific medical condition or problem of expected limited duration). Traditionally, providers have been paid separately for each service received by a patient, a practice that some believe increases costs (US Department of Health and Human Services, 2011c). The Trump Administration modified this programme in ways that resulted in some providers declining to continue to be compensated for Medicare patients this way because they fear an overall reduction in payments (Dickson, 2018).

Another cost-control measure in the ACA is rate reviews. The ACA provides the means for states and the HHS to undertake rate reviews of insurance companies' proposed premium increases and to publicize those deemed unfair. The bar was set at increases of more than 10% in the individual or small group market (Adamy, 2011), but was raised to 15% in 2018 (US PIRG, 2018).

An ACA provision requires insurers generally to spend a minimum of 80% (for individuals in the small group markets) and 85% (for those in the large group market) of sales revenue from premiums on medical care for policy-holders, health information technology and quality improvements. This, the medical loss ratio (MLR), is a term referring to the fact that money spent on medical care, rather than administration, represents a 'loss' to insurers (Harrington, Mukamel & Rosenau, 2012). The MLR encourages health insurance companies to 'eliminate wasteful administrative spending and increase the value consumers receive for their premium dollars' (Davis, Schoen & Stremikis, 2010; Baker, 2011a). In 2012 insurers that did not keep MLRs below the ACA target refunded $1.1 billion to policy-holders (Goodnough, 2012). Between 2012 and 2018 rebates have totalled $4 billion (Norris, 2018).

Some administrative provisions of the ACA – requirements building on existing legislation such as the Health Insurance Portability and Accountability Act of 1996 (HIPAA) – include measures designed to reduce administrative costs, encourage accurate accounting and promote careful and efficient record-keeping. They establish compliance and certification rules that reduce fraud. Penalties for violations of administrative record-keeping are included (CMS, nd, b).

IMPROVING QUALITY

The ACA contains measures that its proponents expected to improve the quality of care at both the individual patient level and for the population in general by encouraging primary care, prevention, new models of integrated care (such as medical homes), the use of comparative effectiveness information by providers, quality measurement, the reporting of information about quality to consumers and improved medical care (Commonwealth Fund, 2010b; Kaiser Family Foundation, 2011a). It also discouraged the overuse of medical care (Jacobs & Skocpol, 2010, pp. 140–4) and set forth a national strategy

for quality improvement. Increased payments to providers for primary care were included and it was hoped that this would encourage medical students to choose these specialties.

Accountable Care Organizations (ACOs) aim to improve quality and reduce costs in the Medicare programme and in the private sector by promoting integrated healthcare and including various methods of linking payment to outcomes. As noted in Box 3.3, ACOs in the United States have seen significant growth, from fewer than 100 organizations in 2011 to over 1000 in 2018, while the proportion of the population enrolled under an ACO contract has grown from a few million to over 32 million, covering 10% of the population (Muhlestein, Saunders & McClellan, 2017; Muhlestein et al., 2018).

A 2018 MedPAC review of ACO model performance in Medicare has found that 'some models— predominantly those at risk for both savings and losses (two-sided risk)—have produced small savings relative to their benchmarks set by CMS, and all have maintained or improved quality', affording these ACOS 'shared savings' bonuses (MedPAC, 2018a).

The Trump administration wanted to shift ACO programmes towards two-sided risk such that more providers would bear a financial risk if they did not reduce their costs of providing care (Minemyer, 2019). In 2018 there were about 50 ACOs that employed this financial risk model but ten times as many chose payment models that did not include two-sided risk (NPC, 2018).

The ACA funds comparative effectiveness research. In 2011 the National Health Care Quality Strategy and Plan was prepared, and the resulting recommendations were reported to Congress for action (AHRQ, 2011). The ACA authorizes the collection of data on healthcare disparities including race, ethnicity, gender, linguistic minorities, the disabled and those who are underserved because of geographical location (rural and frontier populations). It sets up and funds the Patient-Centered Outcomes Research Institute (PCORI), a non-profit research organization tasked with providing the information patients and the public need to make informed decisions about their health.

Both positive and negative financial incentives were put in place. Beginning in 2011, a Center for Medicare and Medicaid Innovation Program was set up to undertake pilot programmes and demonstration projects that reward doctors and hospitals for quality healthcare (Zezza, Abrams & Guterman, 2011). Starting in 2015, the ACA began denying federal payments for Medicare services that are associated with some

hospital-acquired infections. For hospitals with excessive preventable hospital readmissions Medicare reimbursements are reduced. Value-based Medicare payments link payment with results for physicians, hospitals, skilled nursing facilities, home health agencies and ambulatory surgical centres. The goal was for Medicare to become an active purchaser of higher quality health services, which could both reduce costs and improve quality of care (CMS, nd c). Bonus payments to Medicare Advantage plans that provide high quality were implemented, though the Trump Administration proposed changes to these.

The ACA includes nursing home transparency regulations designed to improve protective services for elderly residents through closer oversight, which could result in better quality nursing home care if consumers and their representatives are vigilant and monitor the information made available to them. Many health plans do not do a sufficient job of monitoring quality of the nursing homes in their network (Graham et al., 2018). The ACA gave nursing home patients broader rights to internal and external appeal of decisions by insurers, including coverage denials. In addition, Medicare obtained the right to collect and distribute data about nursing home staffing levels. The success of these measures depends in part on the appropriation of adequate funds; such funds are not assured. In addition, it is not clear how recent deregulation orders will affect these ACA nursing home reporting regulations.

OTHER ACA PROVISIONS INSIDE AND OUTSIDE THE HEALTH SECTOR

The ACA contains several programmes outside the formal health sector. They include opportunities and benefits for consumers, increased transparency, improved public health, an amplified role for the FDA, support for education of medical staff, increased research funding, a reduction of job-lock, redistribution of wealth and reduced fraud.

For example, consumer bankruptcy rates could be reduced as a result of ACA-related coverage expansions. It has been reported that 62% of those who plead personal bankruptcy in the United States do so because of medical bills they cannot pay, and that 75% of those who go bankrupt have health insurance (Himmelstein et al., 2009; Abelson, 2009). But other scholars dispute these numbers and the results of research appear to depend on how medical bankruptcy is defined and measured (Dobkin et al., 2018).

Because the ACA originally required almost everyone to purchase insurance and because it set standards for insurance policies sold in the marketplaces, the number of people who go bankrupt because of medical expenses was expected to fall. But the high co-payments, premiums and deductibles appear to be fuelling continued bankruptcy for medical bills (Sanger-Katz, 2018).

The ACA was expected to simplify choices of health insurance for those individuals and small businesses that purchase it on the open market. Each insurance plan's co-payments and deductibles were to be explained in understandable language and the differences between insurance options was to be made clear. There were four levels of insurance on the individual market (and for small businesses) through the marketplaces. Each has a different level of protection (actuarial value) with the highest level being the Platinum Plan, which covers 90% of a purchaser's health bills. The Gold Plan covers 80% and the Silver Plan 70%. The Bronze Plan, the cheapest, covers 60% of the insured individual's expenses (RAND Corporation, 2010). There is also a catastrophic plan, with a high deductible, for those under 30, with the intent to provide them with a less expensive option.

Premiums for each of the different ACA insurance plans are set by the insurers who will compete on the package and the price at each actuarial level. This means that insurers have an incentive to bargain with providers for discounts and to limit the services provided where possible. To discourage insurers from picking and choosing the markets in which they compete, all insurers are required to offer at least one Silver Plan and one Gold Plan within each ACA marketplace in which they participate. Insurers are not, however, required to offer plans at all four levels in every exchange in which they participate.

Beginning October 2018, the Trump Administration made new, short-term, insurance plans available to consumers. These policies were cheaper than ACA policies, but they generally provided fewer comprehensive benefits or were not available to those with certain illnesses. These policies could be renewed so they could be in effect for up to three years subject to state laws. Insurers selling these policies can deny coverage to those with pre-existing conditions. In short, they do not have to abide by the ACA's regulations regarding covered services. The results are not yet known. One concern is that if younger and healthier people enrol in them, which is likely, premiums will rise in the ACA marketplaces as their risk pool deteriorates. Another is that consumers, attracted to lower premiums, will purchase them without realizing the policies' restrictions – which already appears to be happening (Levey, 2019).

The ACA requires that all health plans sold in ACA marketplaces offer basic health benefits, but how this was achieved varied from state to state. There was no 'single uniform set of "essential health benefits" that must be provided by insurers. Instead, the ACA allows each state to specify the benefits within broad categories' (Pear, 2011). Once established at the state level, this basic minimum of services must be covered by all plans (Bronze, Silver, Gold and Platinum). Due to differing cost-sharing requirements, the value of the benefits will vary for the Bronze, Silver, Gold and Platinum plans. Under the ACA, insurance plans must be 'equal to the scope of benefits provided under a typical employer plan'. Each state has the flexibility to define the 10 'categories of "essential health benefits" that must be provided by insurance offered in the individual and small group markets….' (Pear, 2011). Basic health benefits and services are required in the following categories: ambulatory patient services; emergency services; hospitalization; maternity and newborn care; mental health and substance use disorder services, including behavioural health treatment; prescription drugs; rehabilitative and habilitative services and devices; laboratory services; preventive and wellness services and chronic disease management; and paediatric services, including oral and vision care. Many of the new short-term health insurance policies that the Trump Administration allowed to be sold are expected to exclude many of these services.

When the ACA first went into effect, its website was established by the federal government to provide consumer information. It offers multi-dimensional comparative quality ratings for many insurers (CMS, 2019b). It was intended to interface with the ACA's marketplaces at the state level and to assist individuals in determining whether they are exempt from the requirement to purchase insurance as well as whether their health insurance plan meets ACA requirements. The goal was to increase comparability when shopping across coverage options as well by providing price information to individuals and small businesses (US Department of Health and Human Services, 2011d).

To increase transparency and reduce conflicts of interest among providers, the ACA requires full disclosure of financial relationships between doctors, specialists, hospitals, pharmacists and pharmaceutical manufacturers and distributors of drugs, devices, biological products and medical supplies.

The ACA law included about $7 billion over five years for prevention and public health programmes such as smoking cessation and efforts to combat obesity. Also important to public health is the requirement that chain restaurants in the United States and vending machines display calories for their food products. The ACA assigned new responsibilities to the FDA to regulate and improve food labelling, and to assess and approve generic versions of biological medications. Most of these policy measures were well along in their implementation before the election of President Trump in 2016 (Evich, 2018).

The ACA also included provisions for health education and research. It provided medical students with financial incentives to pursue a career in primary care. Training programmes and loan cancellation were offered to those in primary care who agreed to work in underserved areas. It provided a range of health professionals with scholarships and loans to further their education and also increased Medicare payments for primary care residency programmes in Federally Qualified Health Centers.

The Trump Administration did not rescind these programmes, but its immigration policies made it more difficult for foreign medical providers to enter the United States and practise. Many of these doctors choose to work in primary care, a field less attractive to many US graduates, and agree to practise in underserved areas.

In October 2017 Congress failed to reauthorize funding for the Community Health Centers Fund, an important source of support for these clinics where 27 million Americans obtained care (Cohen, 2017). In some cases, these funds were used by community health centres to hire immigrant doctors. In 2018 some of this funding was restored by the bipartisan opioids package entitled H.R. 6, SUPPORT for Patients and Communities Act.

Many analysts believe that the ACA reduced the problem of job-lock. Job-lock means that people fear changing jobs because someone on their policy has a pre-existing condition and they would not be able to buy or afford health insurance if they left their present employment that provided coverage (Quittner, 2017). There was little research on this topic available to evaluate it under the Trump Administration.

The ACA is redistributive, and this may lead to improved population health (Wilkinson, 1996). First, it implicitly redistributes financing of health services from the healthy to the sick through community rating and guaranteed issue. Second, it redistributes wealth through the taxes

imposed under the law (Rice, 2011). To be deficit neutral, the ACA included fiscal policies that produced revenue to support increases in access through insurance expansion. The redistribution mechanisms in the ACA provide subsidies to the poor, financed by taxes on the wealthy, corporations and medical device manufacturers who will subsidize the less fortunate. The wealthy (defined as individuals with incomes of more than $200 000 per year and families with more than $250 000 per year) have paid more of their wages to Medicare since the ACA was adopted. Wealthier people also pay a tax on unearned income (stock market gains, real estate sales, dividends, annuities, etc.) (Tax Policy Center, 2010). A 'Cadillac tax' was scheduled to begin in 2018 but was postponed and then repealed in 2019 before it went into effect. It would have required that employers pay a 40% tax on health insurance policies that are extremely generous (costing above $10 200 per individual and $27 500 for families).

The ACA included measures to reduce fraud in healthcare, a serious problem in the United States. Better screening for patient eligibility and monitoring providers halted many abuses in the Medicare and Medicaid programmes. Auditing has also lowered fraud. Penalties and sentences for criminal activity were also implemented immediately and the HHS was authorized to employ the same technology as credit card companies to fight fraud. The Health Care Fraud and Abuse Control Program (HCFAC), in existence prior to the ACA, registered $4 billion in recoveries in 2010. Indictments increased dramatically. Predicted reductions in costs from the elimination of fraud in the future are approximately $1.8 billion per year for 2015 (US Department of Health and Human Services, 2011e). The ACA attempts to further strengthen these efforts.

The Trump Administration's record on fraud in healthcare was mixed. It has pursued pharmaceutical companies for fraud on several fronts. Congress approved removing a 'gag order' that prohibited pharmacists from telling customers about cheaper drugs and President Trump signed this law in 2018 (Jaffe, 2018; Clark & Breslauer, 2018). But it was also reported that there had been agreements between pharmacies and insurance companies that had kept some pharmacists from disclosing cheaper drug options to consumers. The Trump Administration declined to enforce instances of corporate healthcare fraud (Radick, 2018), but it did retain healthcare fraud enforcement as a priority. The Trump Administration proposed $751 million for the Health Care Fraud and Abuse Control programme for fiscal year 2018, a 10% increase over the 2017 budget (O'Quinn, Bronson & Greenfield, 2018).

The ACA included elements designed to maintain and strengthen the support of various stakeholders. For insurance companies the promise of more business in the form of many more customers who were required to purchase their product was an important incentive (Grogan, 2011). The fact that Congress abolished the penalty for the individual mandate was a disincentive for insurers because of the potential for adverse selection if healthier people opted out of insurance coverage. On the other hand, insurers benefit from a risk pool that was designed to guarantee that insurers receiving more than their fair share of enrolees with large claims would be compensated for this adverse selection. This is an important protection for insurers because in the United States about 5% of the population consumes half of healthcare expenditures (Hall, 2011).

In 2014 the ACA provided tax credits of up to 50% to small businesses (defined as those with fewer than 25 employees with an average wage of less than $50 000) that provided health insurance (Internal Revenue Service, 2020).

6.2.3 *Limitations of the ACA legislation*

UNINSURED AND UNDERINSURED GROUPS

Overall the ACA did increase the number of people with health insurance. But it did not provide an adequate remedy for all the uninsured in the United States. Still the number of uninsured went from 44 million in 2013 to less than 28 million in early 2017, largely as a result of the ACA's expansion of Medicaid and its subsidies for purchasing individual health insurance on the ACA marketplaces. Most of the remaining uninsured after the ACA was fully implemented were low-income individuals (Oberlander, 2012).

Some elements of the ACA went into effect several years after the full implementation and this meant the uninsured rate remained higher, for longer. This deliberate delay resulted in part from budgetary reasons, but it was also because of negotiations with stakeholders and legislators.

Before the Supreme Court ruling that made the ACA's Medicaid expansion optional for the states, about 33 million non-elderly people were predicted to gain health insurance because of the ACA's Medicaid expansion programme. In total, 94% of the US population would have

been insured, up from 83% prior to the ACA (CBO, 2010b; Schoen et al., 2011). In fact, the ACA increased the number with Medicaid coverage by about 16 million people from September 2013 to November 2017 (in the 49 states that reported data), many fewer than would have been the case if the ACA's Medicaid expansion had not been ruled unconstitutional by the Supreme Court. Still, in 2018, 73 million individuals were enrolled in Medicaid or CHIP. Those obtaining Medicaid after the 2018 mid-term elections, as mentioned above, will add to the numbers covered under the public insurance programme.

An estimated 12 million undocumented immigrants remain uninsured in the United States. Under the terms of the ACA they are not permitted to buy insurance on the ACA marketplaces (CBO, 2010b; Parmet, 2018). If employers work with ACA marketplaces to insure their employees, then by definition, their undocumented workers are excluded. Individuals eligible for health insurance that fail to enrol in a health insurance plan, which includes Medicaid, will continue to be uninsured.

Another anomaly that results from the Supreme Court's ruling allowing states to opt out of Medicaid expansion is that some of those below 100% of the federal poverty level may not be eligible for subsidies. In 2019, 100% of the federal poverty level was $12 490 for individuals and $25 750 for a family of four. Nationally, 61% of those with incomes below the federal poverty line are enrolled in Medicaid (Kaiser Family Foundation, 2019e).

Until 2019 the ACA required those who chose not to purchase health insurance to pay a penalty. Some preferred to pay the penalty as in many cases it cost less than an insurance policy. Also exempt from the requirement to purchase health insurance were those for whom it would be unaffordable (costing more than 8% of income). This determination was based on the price of insurance available on the marketplaces. Insurance policies purchased on the marketplaces are expensive for the poor and for the middle classes and often have very high cost-sharing requirements.

Finally, Congress and President Trump proposed allowing states to file for waivers that contain a work requirement for those on Medicaid. States with approved waivers can require beneficiaries to be engaged in one of the following: work a minimum number of hours per month; be enrolled in school or other educational programme; participate in job, vocational, or job search training; or be searching for a job. In March 2019 seven states had their waiver proposals approved and eight had waivers pending approval (Haught, Dobson & Luu, 2019).

Health policy experts caution that the work requirements could increase uninsurance and underinsurance and add to the administrative costs of Medicaid (Brantley & Ku, 2018; Garfield, Rudowitz & Musumeci, 2018; Shin, Sharac & Rosenbaum, 2018). This could come about through failure of individuals to meet the requirements, difficulty with documenting compliance, or losing coverage by finding employment without health insurance while making too much to remain on Medicaid and being unable to afford ACA marketplace insurance. Administrative costs will rise due to the need to monitor eligibility and compliance and implement coverage lock-out periods, among other things. In addition, experts estimate that Medicaid work requirements could weaken hospitals' financial positions (Haught, Dobson & Luu, 2019). Reports from Arkansas, the first state to implement the work requirements in June 2018, appear to be confirming some of the health policy concerns: Arkansas disenrolled 18,000 beneficiaries in January 2019 (Collins, 2019).

The Trump Administration proposal was struck down by lower courts, but the Administration continued to approve new waivers, and many states followed the president's regulatory authority in this area. A Medicaid work requirement is supported by most Republicans while most Democrats and independents oppose it (Kaiser Family Foundation, 2019a).

WAIVERS AND GRANDFATHERING

A 'flexible' approach to ACA implementation prevailed. Several techniques were employed to keep stakeholders committed to the ACA. Grandfathering meant that the application of ACA rules was postponed as long as an employer did not introduce major modifications to its health plan (Carey, 2010). This meant that existing health plans did not have to meet new ACA standards for some time. Grandfathering clauses reflected legislators' desire for a smooth transition (Kaiser Family Foundation, 2011d). As of 2017, 23% of firms offered at least one grandfathered plan and 17% of covered workers enrolled in grandfathered plans. Over time there has been a marked decline in the number of grandfathered plans available for workers (Kaiser Family Foundation, 2017i).

A second reason for delays in implementation was that the HHS awarded 1500 waivers, most of them temporary, to states, corporations and insurers (Baker, 2011c). Those receiving waivers argued that the ACA would lead

to premium increases so large that they could not continue to offer health insurance to their employees. At least '222 insurers, unions and employers with policies covering 1.5 million people have been granted such waivers, including insurers Aetna and CIGNA, and employers such as McDonald's, Waffle House and Darden Restaurants' (Appleby, 2010).

WEAK ENFORCEMENT

Some elements of the ACA lack enforcement mechanisms. For example, on the topic of insurance premiums the ACA failed to 'grant federal regulators the power to deny increases that are deemed unreasonable' (Mills, Engelhard & Tereskerz, 2010, p. 900). States have similar powers but some are more active in reviewing premium increases than others (Karaca-Mandic et al., 2015). Proponents of the ACA argued that this authority is needed as some insurers increased premiums for employer-sponsored insurance and reduced benefits once the ACA became law (Aizenman, 2011).

The ACA provides for the establishment of an agency to undertake and fund comparative effectiveness research (discussed above) but it rules out the use of this information in medical practice or by insurers for coverage reimbursement purposes. The ACA also includes a 'broad ban on the use of cost-utility analyses'. This information cannot be 'construed as mandates for practice guidelines…' (Neumann & Weinstein, 2010, p. 1495).

FAILURE TO ESTABLISH A VIABLE LONG-TERM CARE COMPONENT

The ACA included a voluntary and self-financed insurance programme for long-term care called the Community Living Assistance Services and Support (CLASS) Act to help cover the cost of daily needs for the elderly. However, some actuaries calculated that it could not be implemented as it was written. This was because it could not meet the requirement that the programme be self-financing over a period of 75 years (Greenlee, 2011). Voluntary programmes, it was argued, attract those who have the highest probability of making claims in the future (Gitterman & Scott, 2011). Never implemented, the CLASS Act was officially repealed by Congress in January 2013 (Kliff, 2013).

STAKEHOLDER RESISTANCE

As is always true in a democracy, if the political environment changes, reforms may be in jeopardy. Opposition to the ACA remains strong, as are calls to repeal and/or replace it. The ACA faced substantial stakeholder resistance from the beginning, and it remains vulnerable to further legal challenge. Stakeholders are likely being affected in different ways by the adoption of and later modification to the ACA. Even though stakeholders were 'at the table' and 'struck a deal', their situation may have changed during the implementation process and this could test their support of the law. Those who benefit from it are likely to continue to support it. Those who lost out or who hoped to do better, will continue to lobby to change it or for full repeal.

If the ACA proves to be highly effective in its efforts to contain costs through reductions in payments to providers, the law could be vulnerable to disruptive provider revolt. What will happen if physicians or hospitals do not accept Medicaid or Medicare patients? Research suggests that this is unlikely (Sommers, Paradise & Miller, 2011). However, as discussed in Chapter 3, many physicians continue to refuse to participate in Medicaid due to low reimbursements in most states. The share of physicians accepting new Medicaid patients in 2013 according to the CDC's National Center for Health Statistics (NCHS) was 68% (Robertson, 2017). In early 2019 acceptance rates varied by medical speciality. In one survey 78% of paediatricians, 88% of general surgeons and 81% of obstetrician/gynaecologists reported that they accepted new Medicaid patients. Overall, 71% of physicians did so as of 2019 (MACPAC, 2019).

Another vulnerability of the ACA is related to employer-sponsored insurance. The ACA assumes, correctly, that most Americans will continue to obtain insurance from their employer, just as they did before the ACA was adopted. While many analysts feared that employers would drop insurance altogether because it would be cheaper to pay the penalty the ACA imposes on large employers than to offer insurance, this has not occurred. One possible reason is that with record-low unemployment rates at that time, large employers cannot compete effectively in the labour market without offering health insurance.

VULNERABILITIES DUE TO POLITICAL POLARIZATION: REPUBLICAN AND DEMOCRATS DISAGREE

The ACA was enacted without bipartisan support in 2010. The Democrats in Congress were in favour of it and the Republicans opposed it. The re-election of President Obama in 2012 assured the survival of the ACA as long as he was in office. Because implementation was stretched out over many years, most of those affected by it had time to adjust to its provisions, but this does not altogether remove political vulnerability as the election of Donald Trump as president has demonstrated. There is strong evidence that political partisanship has increased over the life of the ACA (Davis & Chinni, 2018).

Republicans held a majority in the House of Representatives from 2010 until 2018 and almost all of them remained opposed to the ACA. Some continue to speak of repeal, but they have not been able to fulfil President Trump's promise of 'repeal on day one' after his election. In the absence of any repeal, stakeholders continue to lobby Congress and the Trump Administration for changes to the law. President Trump promised to return to this issue if he was re-elected in 2020 (Mascaro & Lucey, 2019) – but instead Joe Biden was elected to replace him.

The ACA is vulnerable to Congressional action because so many of its components depend on funding appropriations. Under Republican leadership, a number of funding allocations for the ACA have been reduced or eliminated. Many pilot programmes were never implemented (Radnofsky, 2011). For example, the $50 million set aside by the ACA for testing alternatives to medical malpractice litigation was not appropriated despite protests from the AMA, which supports these pilot programmes. Approximately $25 million that would have enhanced patient safety met a similar fate. Other programmes that were either not funded or only partially funded include $24 million to access regional emergency care systems. Only $15 million of the $50 million authorized in the ACA to support demonstration programmes in which nurse practitioners manage health clinics was appropriated by Congress. A project to 'monitor for-profit nursing home chains and a program to increase use of information technology such as electronic health records in nursing homes' was left with no funding despite ACA authorization (Galewitz, 2011).

Funding that was intended for ACA programmes was used by the Trump Administration for other purposes (Galewitz, 2011). Funding for public health, historically one of the most effective uses of government

funding in the field of health, has been reduced, largely because 'the private sector cannot make money on it' (Carroll & Frakt, 2018).

The new short-term health insurance plans sold outside the ACA marketplaces are an additional source of ACA vulnerability. Insurers who sell these policies are not required to sell to everyone – they can pick and choose their customers as 'guaranteed issue' is not required. Insurance companies, therefore, can refuse policies to those with pre-existing conditions. These plans are not required to offer all the protection that the policies sold in the ACA marketplace require (Pear, 2018a). They are less expensive than regular ACA policies, in part because they are not required to offer comprehensive insurance but rather may exclude such benefits as maternity care, prescription drugs and other expensive items. Together with Congress, Trump extended the life of these interim short-term, limited-duration health insurance plans, from 3 months to up to 3 years in many states (Keith, 2018a).

In 2019 the HHS and the US Treasury set out a new policy that provides employers with additional options for providing health insurance to employees. It expands health reimbursement arrangements (HRAs). As of January 2020, individual coverage HRAs can be paid for by employers using tax-preferred funds with some limits and restrictions (Greene, 2020).

The Trump Administration also set up Association Health Plans (AHP) to allow small businesses to form groups to offer healthcare coverage to their employees in 2018. However, the courts invalidated the rule on AHPs in 2019 for inconsistency with federal law.

In 2017 the Trump Administration chose to stop paying so-called 'cost-sharing subsidies' to insurance companies; these payments were designed to help reduce the out-of-pocket payments for low-income policy-holders – those below 250% of the poverty level. Without these subsidies many would either go without insurance, use fewer services or purchase the new, short-term, less-regulated plans discussed above (Pear et al., 2018b). Federal courts reviewed the legality of Trump's cuts to the cost-sharing reductions of the subsidy programme. One ruled that 'the government had a legal obligation to pay them. The Government violated a statutory obligation created by Congress in the Affordable Care Act when it failed to provide Montana Health its full cost-sharing reduction payments for 2017.' The judge ruled that 'Congress's failure to appropriate funds does not wipe out that obligation.' Another group of insurers is challenging the Administration's decision on the subsidies with a class action suit. In contrast, some judgments that favoured the Trump Administration's action on the

subsidies contended that the payments violated the Constitution which gave the power of appropriations only to Congress (Pear, 2018b). Ultimately, the courts will decide the issue if Congress cannot reach an agreement. (See Section 6.1.3 on the Supreme Court concerning the legality of risk corridor payments supported by the Trump Administration.)

The ACA is also vulnerable to the availability of resources at many other levels. The United States has a large national deficit for which the federal government must account. The states find themselves with inadequate financial resources. Most states cannot legally run a deficit, and this limits their ability to participate in many of the ACA programmes that require their funding (Weissert & Weissert, 2006).

VULNERABILITY DUE TO DEPENDENCE ON THE STATES

The ACA is vulnerable to the will and capabilities of the states. The states' role in the ACA is very large. States may set up marketplaces and must manage the Medicaid expansion if they choose to go forward with it, fully or in part. They monitor rate reviews of insurers and publicize excessive premium increases (Greer, 2011) (see Section 2.2.3). States can 'slow down implementation, divert priorities, and entangle the implementation process in legal arguments' (Greer, 2011, p. 471). The Trump Administration added to this vulnerability by increasing the power of the states to regulate health insurance and annul federal regulations of the ACA (Norris, 2019). With more state power the possibility of widely varying rules and inequality across states arises. The constrained financial resources of the federal and state governments could also endanger the future of the ACA. Professionalism and the ability to implement programmes vary widely by state, and state cooperation with the federal government is essential to the continued existence of the ACA.

Initially several states in the South indicated that they would not set up and regulate insurance for the ACA marketplaces (Mercer, 2013). The ACA specifies that the federal government will establish a marketplace in states that fail to do so. State opposition in some cases is about jurisdictional issues rather than finances (Jost & Hall, 2011).

LOW PUBLIC SUPPORT FOR THE ACA AND LOW LEVELS OF KNOWLEDGE

As noted, during most of the time it has been in effect, fewer than half of Americans have expressed support for the ACA. This has changed as explained above, with a small majority supporting the ACA as the 2020 elections approached. Polls found strong support for particular provisions such as requiring coverage of pre-existing conditions at no additional charge. The public is not, however, always well informed. Eighteen months after the passing of the bill, 46% of the US public thought that the ACA had already been repealed or were not sure about this. Only 52% understood that it remained in effect (Brodie et al., 2011). Interestingly, those with higher levels of knowledge about the ACA were more likely to support it (Choma et al., 2018).

A majority of the US population supports most of the individual elements of the ACA when queried by pollsters. Over 90% support setting up ACA marketplaces for purchasing insurance; however, the individual mandate is, and has been, much less popular.

The law presupposes an active role for consumers who purchase insurance on the ACA marketplaces. Information about insurance choices is more broadly available to consumers in the United States now than before the adoption of the ACA. Extensive data, designed to assist consumers in making choices about the quality and cost of healthcare, were made available online shortly after the adoption of the ACA in 2010. However, research indicates that few people avail themselves of such data when making healthcare decisions, in part because they lack the necessary health literacy and numeracy skills (Dixon, Greene & Hibbard, 2008; Abaluck & Gruber, 2009; Housten et al., 2016). It became even more challenging when the Trump Administration cancelled almost all funding for this type of consumer assistance in 2018 (Corlette & Schwab, 2018).

6.3 The future of the ACA

Policy 'take back' is difficult even when legislation is unpopular, and the ACA is no exception. It is now the *status quo* and time is on the side of those supporting healthcare reform. Voters and stakeholders become accustomed to the benefits they receive and removing them is increasingly difficult as

time passes. This appeared to be the case for the ACA until the Trump Administration's initiatives to do away with it.

After President Trump's election in 2016 the ACA's future was in doubt. The changes he has made to the ACA, through executive orders for the most part, have demonstrated that this concern was not misplaced. President Trump indeed succeeded in weakening the ACA. At time of writing, Joe Biden had just been elected as President of the United States, defeating Mr. Trump, partly on the promise to strengthen the ACA. He may face considerable challenges from the courts, however. Moreover, Biden's success in strengthening the ACA will depend on congressional support, which is hard to predict in advance.

Revisions to the ACA are expected to be ongoing; health system reform is never final. As with any law, unanticipated effects resulted from the ACA. These may have influenced stakeholders in ways that they did not expect. A number of internal contradictions were discovered within the ACA. As the ACA confronted the real world and interacted with a multitude of variables, people got to know it, as they learned to live with it.

Human ingenuity leads to gaming and efforts to get around regulations and rules. In addition, the outcome of policy is difficult to predict, and the ACA is no exception. Stakeholder resistance – even to those aspects agreed upon in the negotiations over the contents of the ACA – could arise and contractual agreements may be revisited. The courts, including the Supreme Court, will almost certainly be called to rule on additional points of the ACA as new legal challenges emerge in the future.

Policy decisions circumvented when the ACA was drafted could resurface in the form of new problems. The absence of a robust public insurance plan to compete with the private sector insurers may have contributed to less than adequate competition in the health insurance market. Mr. Biden advocated the creation of such a public insurance plan during his successful campaign for the presidency in 2020. Some cost-control mechanisms that were overlooked by the ACA may have to be reconsidered – for example, allowing the federal government to negotiate drug prices with pharmaceutical manufacturers. The number of individuals remaining uninsured may require attention in the future, as premiums rise and more people take advantage of the repeal of the penalty attached to the individual mandate. The issue of long-term care insurance could also resurface, though experts are doubtful.

7

Assessment of the health system

Chapter summary

- The US healthcare system has both considerable strengths and notable weaknesses.
- Successes include a large and well-trained health workforce; a wide range of high-quality medical specialists, secondary and tertiary institutions; a robust health sector research programme; and, for selected services, among the best medical outcomes in the world.
- It suffers, however, from incomplete coverage and inadequate care for the uninsured; health expenditure levels per person that far exceed all other countries; poor results on many objective and subjective measures of quality and outcomes; an unequal distribution of resources and outcomes across the country and among different population groups; and lagging efforts to introduce health information technology.
- Life expectancy in the United States is lower and mortality and morbidity are higher than in other higher-income countries, although there is disagreement over whether or not this relatively poor performance on mortality is due to structural problems with the healthcare system. Because a myriad of cultural, socioeconomic, environmental, and genetic factors affects health status, it is difficult to determine the extent to which deficiencies are health-systems related.

- The efficiency of the US health services is compromised by high administrative costs. These occur both at the insurance and provider levels. The administrative costs of health insurance are higher than in other countries because private insurers typically operate on a for-profit basis, thus seeking returns for investors, and must invest considerable resources into advertising, determining eligibility and claims processing. At the provider level, the US system requires more administrative staff than elsewhere, in part because hospitals and physicians must hire large numbers of staff to work with numerous private and government insurers.

7.1 Health system governance

It is extremely difficult to summarize the extent to which the United States has achieved successful health system governance. It is a large country with multiple health systems and has a highly diverse population. Health outcomes differ considerably among different population groups and may not be primarily the result of the healthcare system itself. Moreover, among analysts and policy-makers there is little agreement on the system's successes and failures, nor, as a result, on the best future path. This brief section summarizes just two of the many issues discussed in this book concerning system governance – transparency and accountability – before proceeding to the body of the chapter.

7.1.1 *Transparency*

In some ways the United States is among the most transparent countries in healthcare, and in other ways it is among the least. It was a pioneer in systematically measuring and then refining concepts of care quality. In addition, perhaps more than any other country, the United States has made such ratings available through healthcare report cards that compare individual hospitals, medical groups, nursing homes and insurance policies. While comparable data are hard to come by, the United States is among the world's leaders in investing in health services research – although notably, unlike other high-income countries, the results of cost-effectiveness analyses usually cannot legally be used to determine what services are covered by government

programmes or how much providers who serve those programmes are paid. Similarly, the consumer movement in both healthcare and other aspects of the economy came early to the United States. With the widespread use of the Internet, many patients feel more empowered in influencing the care they receive. To illustrate, Americans are more than twice as likely as those in nine other high-income countries to be patients of medical practices that offer them the option to view online, download or transit information from their medical records (see Table 7.9, below). Finally, the public is involved in health policy formulation, not only through election of officials, but also through such things as being able to comment on major federal regulations before they are enacted. Nevertheless, as discussed in Section 2.6.5, harnessing consumer participation has often been challenging.

In other ways, however, transparency in the healthcare areas is poor. More than any other country, Americans often find it extremely difficult to determine the price they will pay for a service in advance. This is the case for several reasons, including: each insurer negotiates separately with different hospitals, doctors and pharmaceutical companies; prices differ depending on whether a provider has explicitly contracted with the insurer as being 'preferred'; coverage varies according to the specifics of a person's insurance benefits; and list prices usually do not have any meaning (except for uninsured persons, who have no one to negotiate on their behalf) (Rosenthal, 2018).

As a result, there have been several recent initiatives to improve price transparency in different sectors of the healthcare system. One notable example from 2019 was requiring hospitals to post their negotiated prices in a consumer-friendly manner (Wynne, LaRosa & Cowey, 2019). At the time of writing there are a number of proposals before the US Congress to reduce the incidence of 'surprise billing' which occur when patients being treated in a hospital or emergency room are treated by physicians who, unknown to them, are not members of their managed care network. It is far too early to know whether these and other initiatives will significantly improve price transparency.

7.1.2 *Accountability*

The US healthcare system arguably has fewer methods of ensuring accountability than those in most other high-income countries. As this book has made clear, there is no single US system, but rather, separate ones

for subgroups of the population, the largest being for employer-sponsored insurance. Others include Medicare for seniors and the disabled, Medicaid for some of the poor and near-poor, separate systems for military personnel and veterans, another for American Indians, another for prisoners, and a safety net that is not centrally organized and which is operated at local levels, for those without coverage. Moreover, there is no overarching system that monitors all of these subsystems, nor anything closely resembling it.

Instead, each of these systems has in place its own monitoring systems. It is beyond the scope of the book to evaluate each of them, and generalizations are difficult. For example, government health insurance programmes tend to have low administrative costs and tend to pay providers less than other insurers, but often there are reports of mismanagement and fraud, particularly on the part of providers submitting false claims for payment – although this problem is hardly confined to government systems. The good and bad is illustrated by the Veterans Health Administration (VHA).

Established in 1930, today the VHA is the largest integrated healthcare system in the United States and the second largest federal department with 300 000 employees. It provides medical services to nearly 9 million veterans through a nationwide network of 172 hospitals and over 1000 outpatient sites (US Department of Veterans Affairs, 2019).

While viewed in the past as a provider of last resort, the VHA has received considerable attention for what many researchers view as a greatly improved system over the past 20 years (Jha et al., 2003; Oliver, 2007). It has pioneered efforts to improve quality. By 2004–2005 the VHA outperformed private, Medicare and Medicaid payers for the percentage of patients experiencing high-quality care in 13 of 15 indicators, including preventive, outpatient and inpatient care (Oliver, 2007). In 2005 VHA patients were found to be more satisfied than private sector patients with both inpatient (83 vs 73 out of 100) and outpatient (83 vs 75 out of 100) care (CBO, 2012b). Moreover, in accomplishing these things, it has been unusually successful in controlling costs. Research comparing costs at VHA medical centres to Medicare FFS payment for equivalent services found, on average, Medicare costs to be 20% higher (Nugent et al., 2004). This is, in part, because the VHA has the additional advantage of being allowed to leverage its purchasing power to drive down costs for services such as pharmaceuticals, whereas Medicare does not. Especially noteworthy have been its accomplishments in health information technology, where its VistA

system can generate reminders about tests and treatments according to clinical guidelines, and utilizes computerized order entry and electronic prescribing. While other systems are catching up, the VHA was a pioneer in this regard.

At the same time, in recent years the VHA has faced severe funding crises, which has led to access and quality of care issues. In the most glaring example, which came to light in 2014, there was a major scandal in which VHA hospitals were accused of falsifying their waiting list records to make them appear shorter so as to meet performance goals, resulting in more than 100 000 veterans facing long waits or never receiving care (Cohen, 2014). In addition, compiling research across the United States, journalists from two newspapers reported that VA nursing homes have harmed veterans, although it is not clear that the quality problems were worse than in private facilities (Slack & Estes, 2019). Accountability is even more difficult to assess for employer-sponsored health insurance, where a plurality of Americans obtains their coverage. As discussed in Section 2.5.2.1, most employees with coverage are in self-insured plans that are exempt from state regulation and instead are subject to alternative requirements that focus far more on pension solvency than health insurance adequacy. The ACA did improve accountability in several ways: by requiring that employers with 50 or more employees provide subsidized insurance to full-time employees that provide specified minimum benefits (or else pay a penalty), providing a cap on annual OOP costs, covering pre-existing conditions and providing certain preventive benefits free of cost-sharing. These requirements do not apply to smaller employers, however, that elect not to offer health benefits to their workers.

7.2 Accessibility

Insurance coverage in the United States is not universal. In 2017 about 10% of those under the age of 65 did not have public or private health insurance – a substantial decline from the 17% figure in 2013, which was just before the major provisions of the ACA went into effect (Kaiser Family Foundation, 2018a). Those without health insurance – a group, not surprisingly, that is disproportionately represented by people with lower incomes – often do not have a regular physician and are likely to receive free or reduced fee care outside doctors' offices (e.g. CHCs, emergency departments) or forgo some

or all the services or prescription drugs that they need. Paying for care in the absence of insurance can cause financial strain and sometimes bankruptcy.

For the under-age 65 population in the United States, health insurance is largely tied to employment. Beginning in 2014, employers with more than 50 employees have been required to offer coverage. Other sources of coverage are Medicaid and individual health insurance policies, the latter purchased either through or outside the ACA marketplaces. Both of these options are discussed extensively below.

7.2.1 *Insurance coverage and usual source of care*

In 2017 it is estimated that 28.5 million Americans did not have health insurance coverage at some point during the year, constituting 8.8% of the total population. This is down considerably from the 58.5 million people estimated to be uninsured in 2013 before implementation of the major coverage expansions included in the ACA. Researchers have also tried to estimate the number of people who were underinsured, and not surprisingly, the figure is much higher – an estimated 28% of insured adults have been defined as underinsured (Collins et al., 2017)[13].

The distribution of the uninsured is skewed towards those who are economically most vulnerable. In 2017, 17% of those under age 65 with incomes below the federal poverty level (FPL),[14] and an equal percentage between 100 and 200% of the FPL, were uninsured (Fig. 7.1). In contrast, uninsurance rates were 5% for those above 400% of the FLP. Coverage also varies considerably by race/ethnicity (not shown in figures). Among those under the age of 65, about 7% of non-Hispanic Whites, 11% of African Americans and 7% of Asians are uninsured. This compares to 20% of Hispanics/Latinos (US Department of Health and Human Services, 2017, Table 105).

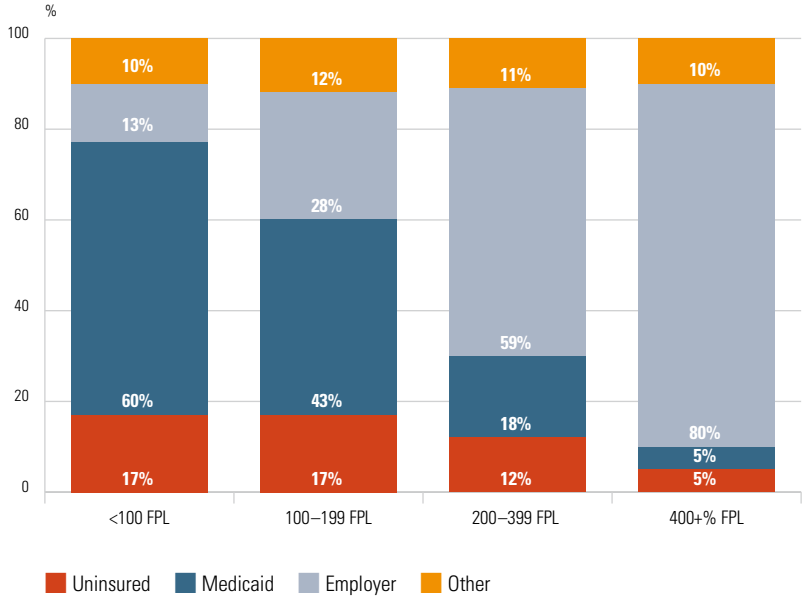
Immigration status is also highly correlated with uninsurance. In 2017 uninsurance rates among US citizens under age 65 was 10%, compared to 24% for legal immigrants and 47% for undocumented immigrants (Kaiser Family Foundation, 2019h).

---

13 Underinsurance was defined as spending, excluding premiums, of 10% or more of income (5% for those below 200% of the FPL) or having a deductible more than 5% of household income (Collins et al., 2017).

14 In 2017 the FPL was $12 060 for a single person and $24 600 for a family of four.

FIG. 7.1 Health insurance coverage of the under-age 65 population by poverty level, 2017



Notes: FPL= federal poverty level. The FPL was $12 060 for single persons and $24 600 for a family of four in 2017. Data may not total 100% due to rounding

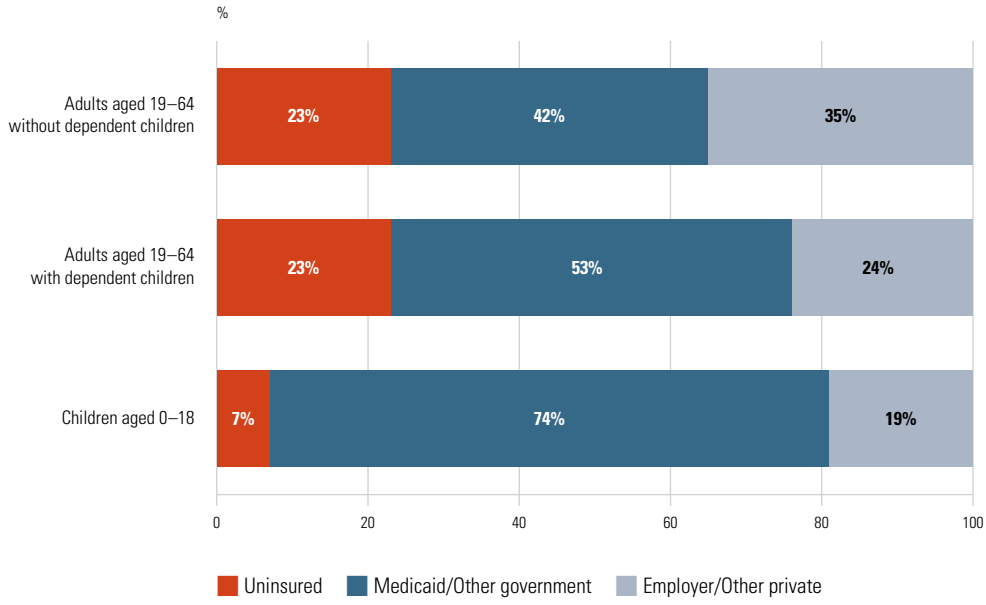
Source: Kaiser Family Foundation, 2017e

There are also major disparities with regard to geographical location, usually reflecting relative incomes, employment opportunities and the generosity of Medicaid eligibility criteria in the states of each region. Uninsurance rates are much higher in the South than the Northeast, with the Midwest and West falling in between. The rate was 6.5% among adults aged 18–64 in the Medicaid expansion states, compared to 12.2% for the other states. The highest rate was Texas at 17.3% and the lowest was Massachusetts at 2.8% (Keith, 2018b).

Poor and near-poor children are the one age group that has had better access to insurance coverage. Their uninsurance rate of 7% was less than one third as high as adults with incomes below 200% of the FPL (Fig. 7.2). The lower rates for poor and near-poor children reflect in part a US policy initiative – specifically, CHIP. The purpose of the programme, which began in 1997, was to provide insurance coverage for uninsured children whose families had low incomes but whose incomes were not low enough to qualify for Medicaid. Medicaid rules in most of the non-expansion states prohibit coverage for adults without children or may make it difficult for adult parents to qualify (except for pregnant women). In contrast, Medicaid

income eligibility limits for children are higher than for adults. Moreover, lower income adults often work for small firms and others that typically are not required to provide health insurance.

FIG. 7.2 Health insurance coverage of low-income adults under age 65 and children, 2017



Notes: Data may not total 100% due to rounding. Children includes all individuals under age 19. Low-income refers to Poor and Near Poor individuals earning less than 200% FPL. Federal poverty level (FPL) for a family of four in 2017 is $24 600/year

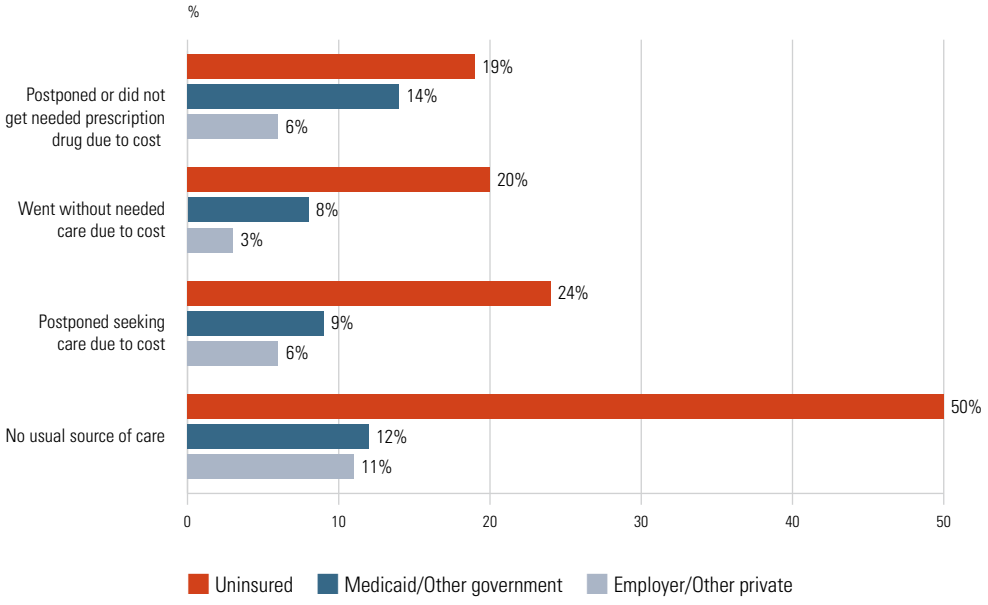
Source: Kaiser Family Foundation, 2017e

In the United States there is a direct relationship between insurance status and having one's usual source of medical care at a doctor's office. Generally, those with private health insurance and Medicare have access to medical care private practices. This is not the case, however, for most of the uninsured and many of those on Medicaid. Because Medicaid pays substantially less than other insurers, particularly in some states, physicians often limit the number of Medicaid enrollees in their practice.

As shown in Fig. 7.3, those who have insurance nearly always have a usual source of care, irrespective of income. In contrast, only half of those who are uninsured report a regular source of care. The other bars in Fig. 7.3 show that the uninsured are much more likely than those with either

employer-based or Medicaid coverage to report not obtaining needed care or prescription medicines, or postponing care, due to costs.

FIG. 7.3 Barriers to healthcare among adults aged 18–64 by insurance status, 2017



Note: Includes individuals aged 18 to 64. Includes barriers experienced in past 12 months. Respondents who said that their usual source of care was the emergency room were included among those not having a usual source of care. All differences between uninsured and insurance groups are statistically significant ($p<0.05$)

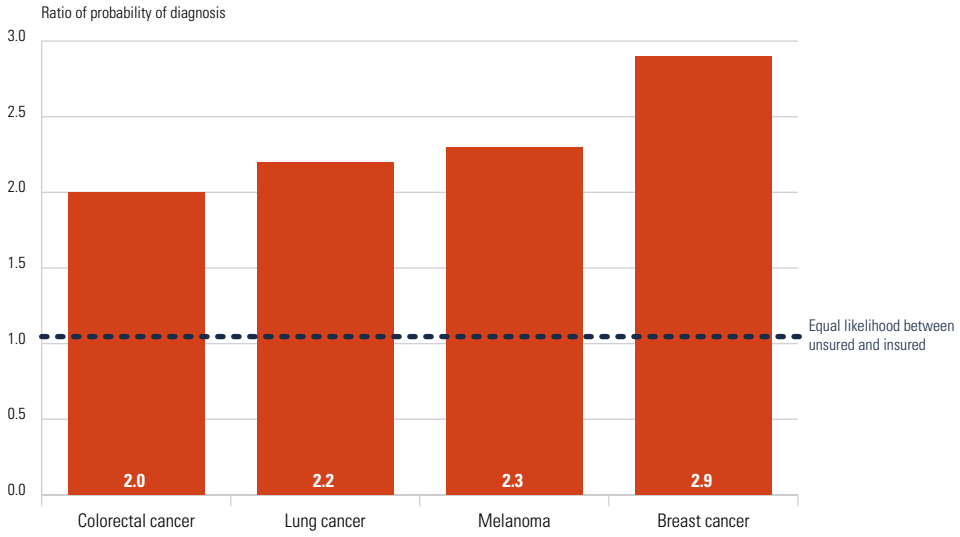
Source: Kaiser Family Foundation, 2017l

7.2.2 *Impediments caused by lack of financial resources*

Not surprisingly, lacking insurance also has other consequences, including difficulty accessing cancer screening and treatment. Mammography use among uninsured women aged 40–64 is only 30%, compared to 58% for those with Medicaid and 72% for women with private insurance. This appears to be due to insurance rather than SES as rates for Blacks (70%) are higher than for Whites (66%) (Kaiser Family Foundation, 2018c).

One other impact is noteworthy: the stage at which a person is diagnosed for particular cancers. In all four cancers shown in Fig. 7.4 – colorectal, lung, melanoma and breast – the uninsured are between two and three times as likely as the insured to be diagnosed at stage III or IV compared to stage I.

FIG 7.4 Diagnosis of late-stage cancer: uninsured vs privately insured



Source: Kaiser Family Foundation, 2012c

Comparative international data used in this section are obtained from representative surveys of the general population, sicker adults and primary care physicians conducted by the Commonwealth Fund, a US-based foundation.

Compared to several other high-income nations included in the survey, access problems due to the cost of medical care are greater in the United States. Table 7.1 examines sicker adults[15] in 2016 with regard to those (a) not filling a prescription or skipping doses; (b) not visiting a doctor when having a medical problem; and (c) not getting recommended tests, treatments or follow-up visits – all due to costs. Among respondents, 42% reported having one or more of these problems over the past year, which was proportionally 40% higher than any other country and more than twice as high as seven of the 10 countries (not shown in Table 7.1). In nearly all cases Americans reported these problems far more often than those in other countries. The only exceptions were for one measure of access in Canada (skipping dental care) and in France (trouble paying bills).

15 This is defined as being in fair or poor health, having had surgery or been hospitalized in the past two years or having received care for serious or chronic illness, injury or disability in the past year.

TABLE 7.1 Cost-related access problems in past year, 2016

PERCENTAGE REPORTED:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Had any cost-related access problem to receiving care from a doctor this year	14	16	17	7	8	18	10	8	22	7	**33**
Skipped dental care or check up because of cost in the past year	21	28	2	14	11	22	20	19	21	11	**32**
Had serious problems paying or was unable to pay medical bills	5	6	23	4	7	5	8	5	11	1	**20**

Source: Schneider et al., 2017

7.2.3 *Waiting times*

Table 7.2 shows several indicators of waiting times in 11 high-income countries in 2016. Results are presented from three questions on how quickly respondents saw a doctor or nurse the last time they needed care, the length of waiting time to see a specialist, and the length of waiting time for elective surgery.

The United States performed well internationally with regard to seeing a specialist and getting elective surgery, with waiting times either second or third lowest. Germany, France, the Netherlands and Switzerland performed well in these two measures, and Canada worst. The picture is somewhat different for primary care. The United States ranked 8th out of the 11 countries. The Netherlands and New Zealand performed best, and Canada and Norway worst. The US rankings are not surprising. Access to specialty care and surgery is relatively high because there are ample resources (of both specialists and equipment for performing procedures) and few restrictions on what and how much medical equipment hospitals, other health facilities and physicians can purchase and own.

TABLE 7.2 Adults' experiences with access to healthcare in 11 high-income countries, 2016

PERCENT OF ADULTS WHO:	Saw a doctor or nurse on the same or next day, last time they needed medical care	Waited two months or longer for specialist appointment	Waited four months or longer for elective/ non-emergency surgery
Australia	67	13	8
Canada	43	30	18
France	56	4	2
Germany	53	3	0
Netherlands	77	7	4
New Zealand	76	20	15
Norway	43	28	15
Sweden	49	19	12
Switzerland	57	9	7
United Kingdom	57	19	12
United States	**51**	**6**	**4**

Source: Schneider et al., 2017

7.2.4 *Other access issues involving insurers and providers*

Two other aspects of access are examined here: troubles with insurers and access to providers. Beginning with the former, the 2016 Commonwealth Survey asked about two problems dealing with insurers or government payers: (1) spending a lot of time on paperwork or having disputes over medical bills, and (2) having payment denied or the size of the payment being less than expected. The results from 11 countries are shown in Table 7.3. For each of these issues the United States and France performed worst; in contrast the problems were miniscule in many of the other countries.

TABLE 7.3 Problems with health insurance in the last year (%), 2016

PERCENTAGE REPORTED:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Spent a lot of time on paper or disputes related to medical bills	5	5	28	5	8	3	5	3	11	0	**16**
Insurance denied payment for medical care or did not pay as much as expected	9	14	24	8	8	2	2	2	12	1	**27**

Source: Schneider et al., 2017

The poor US performance is again not surprising. Insurance benefits vary by insurer and co-payments are normally required. Often there are in-network providers vs out-of-network providers, as well as benefit tiers in pharmaceuticals, which can be confusing and are often the source of disputes. Finally, most health insurers are for-profit so there is at least some economic incentive to deny or reduce payment, though such practices, if overbearing, will reduce satisfaction among enrollees and could result in lower enrolment in subsequent years.

Access to providers was discussed in Section 3.4 in the context of Medicaid. In short, because programme payments are so low in many states, it is often difficult for Medicaid enrollees to find a physician willing to treat them. In such instances, care is frequently sought from community clinics or hospital emergency departments.

7.2.5 *Progressivity of the financing system*

The progressivity of a healthcare financing system is often measured by whether people with higher incomes and wealth pay a greater proportion of their incomes or wealth towards the financing of healthcare than do people with less income and wealth. If so, the system is considered to be progressive. If those of lower means pay a higher fraction of their income or wealth to finance healthcare than do wealthier people, the system is viewed as regressive.

Since the United States does not have a single source of insurance, it is difficult to assess overall progressivity. Such an analysis needs to take into account several types of payment, including premiums for public and private coverage; OOP costs; taxes at the federal, state and local levels; and tax expenditures such as the deductibility of health insurance premiums from taxes. An effort to summarize progressivity was undertaken by Patricia Ketsche and colleagues (2011).

Overall, it was found that the US healthcare financing system was somewhat regressive. On average, Americans paid 15.5% of their incomes towards healthcare. Interestingly, the proportions of income spent in the four highest quintiles was about the same, varying from 14.8% to 16.0%. The poorest quintile, however, spent more – 22.7% of income.

7.2.6 *How the ACA affected access and equity*

There are three major ways in which the ACA increased access and/or equity. Firstly, private health insurance coverage rose as a result of the employer and individual insurance mandates, coupled with subsidies provided to purchase health insurance. Secondly, Medicaid coverage increased in the expansion states because programme eligibility rules were liberalized; in those states all poor and near-poor persons with incomes up to 138% of the federal poverty level became covered. Thirdly, some of the financing is progressive: individuals with incomes over $200 000 and families with incomes above $250 000 pay additional payroll taxes as well as income taxes on their investment incomes to help finance the insurance subsidies and Medicaid expansions. More generally, another way in which the ACA increased health equity was making those with pre-existing medical conditions or a history of illness eligible to purchase insurance at the same price as others.

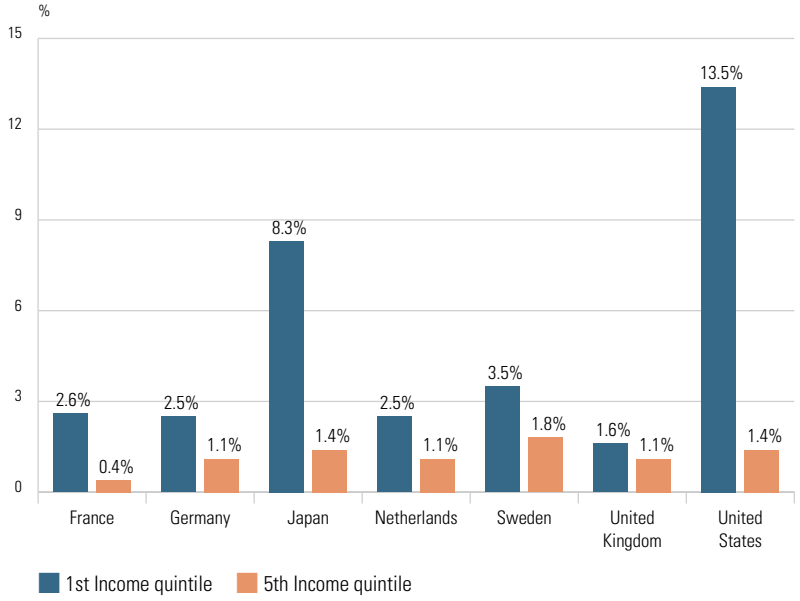
7.3 Financial protection

Many Americans face tremendous challenges in paying for healthcare. This is a result of lack of breadth, scope and depth of coverage. The United States is unique among high-income countries in not providing coverage to nearly all citizens, with about 10% of Americans lacking coverage. Scope is also limited, with Americans paying for 41% of dental costs and 27% of nursing home costs out-of-pocket (California Health Care Foundation, 2020). Finally, as discussed in Chapter 3, depth is limited in large part due to the high deductibles faced by those with employer-sponsored coverage.

Per capita OOP spending is higher in the United States than in any other country except Switzerland; Chapter 3 discussed one of the main reason: deductibles. As shown in Fig. 3.12, average deductibles in employer-based plans increased nearly three-fold between 2006 and 2019, to an average of over $1655 for a worker with individual coverage. Moreover, those with coverage in the ACA's marketplaces face even higher amounts, averaging approximately $4000 in 2018.

Interestingly, citizens of several other countries also experience so-called 'catastrophic' OOP spending. Fig. 7.5 uses World Bank data to show the percentage of the population who spent 10% or more of their income OOP for the most recent year that is available, 2010 (2012 for the United States). Two bars are shown, corresponding to the lowest and highest income quintiles. In all eight countries shown, fewer than 1.5% of those in the top quintile spent 10% or more of their incomes OOP. The figures for the lowest income quintile, however, show a great deal of variation – but the clear pattern is that those in the United States are far more likely to experience catastrophic spending. Nearly 14% of low-income Americans crossed the 10% threshold, compared to about 8% of Japanese, but less than 4% of those in the other six countries.

FIG. 7.5 Percentage of population who spent 10% or more of income out-of-pocket, by top and bottom income quintiles, 2010



Note: Data for the United States are for 2012. The 1st income quintile corresponds to the lowest income and the 5th corresponds to the highest income quintile

Source: World Bank, 2019

7.4 Healthcare quality

High-quality care and the best possible health outcomes are the main things that people want from their healthcare system. While objective measures are generally seen as most important, subjective measures are also valued. How people view the care they receive influences how the healthcare system will evolve. As noted elsewhere in the book, the 'managed care revolution' in the early to mid-1990s resulted in a 'managed care backlash' just a few years later, which triggered more reliance on PPOs and less on HMOs, which had sometimes employed heavy-handed tactics to manage care. Examples of such tactics included requiring referrals to obtain specialist services, denying coverage after care was received, and putting up administrative barriers that made it difficult for both providers and patients to receive timely reimbursements.

The United States performs well on some measures of quality and outcomes from an international perspective, while it does not perform so well on others. It is important to stress, however, that these measures are skewed by the access problems discussed in Section 7.2. To illustrate, even though overall hospitalization rates are lower in the United States than in most OECD countries, the rate for asthma is by far the highest among high-income countries (OECD, 2018a). The high US asthma rate may be due to several factors, including air quality in urban areas or even genetics. A major part of the explanation, however, is poor access to primary care, especially among the uninsured. This is not to say that quality is not a problem; rather, it shows how quality closely interacts with access to care.

7.4.1 *Objective measures*

Voluminous data exist on outcomes and quality of care in the United States. To keep the presentation and discussion manageable, the focus is on indicators where cross-national comparisons are available. The discussion is divided into three sections: prevention and screening, cancer survival rates and asthma admissions. Unless otherwise noted, all data are from OECD (2018a).

PREVENTION AND SCREENING

Beginning with immunizations, Table 7.4 shows immunization rates in 2016 among the high-income OECD countries for three diseases: diphtheria, tetanus and pertussis (DTP); hepatitis B; and influenza. The first two show the percentage of children immunized; for influenza it is the percentage of the population aged 65 and older.

TABLE 7.4 Immunization rates for selected diseases, 2016

	DTP (% of children immunized)	HEP B (% of children immunized)	INFLUENZA (% of aged 65 and older)
	2016	2016	2016
Australia	94	94	–
Austria	87	87	20.3[b]
Belgium	98	97	58[c]
Canada	91	55	59.8
Chile	95	95	54
Czech Republic	96	96	15.5[b]
Denmark	94	–	40.8
Estonia	93	93	2.8
Finland	92	–	47.3
France	97	88	49.8
Germany	95	88	35.3
Greece	99	96	48.9[b]
Hungary	99	–	19.9
Iceland	91	–	47
Ireland	95	95	54.5
Israel	94	95	62.3
Italy	93	93	49.9
Japan	99	–	51[a]
Korea	98	98	84.4
Latvia	98	98	4.3
Lithuania	94	95	22.6
Luxembourg	99	94	38

	DTP (% of children immunized)	HEP B (% of children immunized)	INFLUENZA (% of aged 65 and older)
	2016	2016	2016
Netherlands	95	93	66.8[a]
New Zealand	92	92	67
Norway	96	–	38
Poland	98	95	9.7[b]
Portugal	98	98	50.1[a]
Slovak Republic	96	96	13.3
Slovenia	94	88	9.8
Spain	97	97	55.5
Sweden	98	67	49.1
Switzerland	96	17	–
Turkey	98	98	7
United Kingdom	94	–	70.5
United States	**95**	**93**	**69.1**[a]
Median	**95**	**94.5**	**48.9**

Notes: [a] = 2015 data; [b] = 2014 data; [c] = 2013 data; – = data not available

Source: OECD, 2018a

The US rates are DTP, 95%; hepatitis B, 93%; and influenza, 69%. The United States is at the median for DPT and slightly below it for HPV but ranks high internationally for influenza vaccinations.

Table 7.5 shows screening rates for breast cancer (mammography) and cervical cancer (Pap smears) for 2014, the most recent year with complete data. The OECD data present both population survey data and programme data; shown here is the former because there are no programme data available for the United States. Of the 26 countries compared, the United States was among the top performers in both screening tests, 7 percentage points above the median for mammography and 13 percentage points higher for cervical cancer screening.

TABLE 7.5 Cancer screening rates, 2014

	Mammography screening survey data (% of females aged 50–69 screened)	Cervical cancer survey data (% of females ages 20–69 screened)
Austria	72.7	86.6
Belgium	75.5[b]	68.7[b]
Canada	72.2[c]	73.4[c]
Chile	56.8[a]	58.3[a]
Czech Republic	76.7	87.2
Estonia	39	57.7
France	75	75.4
Germany	73.5	80.4
Greece	59.6	75.5
Hungary	64.9	59.6
Israel	82.6[a]	58.6[a]
Italy	72	79
Japan	41[b]	42.1[b]
Korea	61.6[a]	56.6[a]
Luxembourg	81	83.6
Netherlands	79.6[a]	63.7[a]
Poland	58.6	71.7
Portugal	84.2	70.7
Slovak Republic	54.1	69
Slovenia	72.1	70.7
Spain	79.8	68.7
Sweden	90.4	–

	Mammography screening survey data (% of females aged 50–69 screened)	Cervical cancer survey data (% of females ages 20–69 screened)
Switzerland	47.4[c]	74.5[c]
Turkey	24.7	23.4
United Kingdom	57.9	62.8
United States	**79.5**[a]	**83.3**[a]
Median	**72.15**	**70.7**

Notes: [a] = 2015 data; [b] = 2013 data; [c] = 2012 data; – = data not available

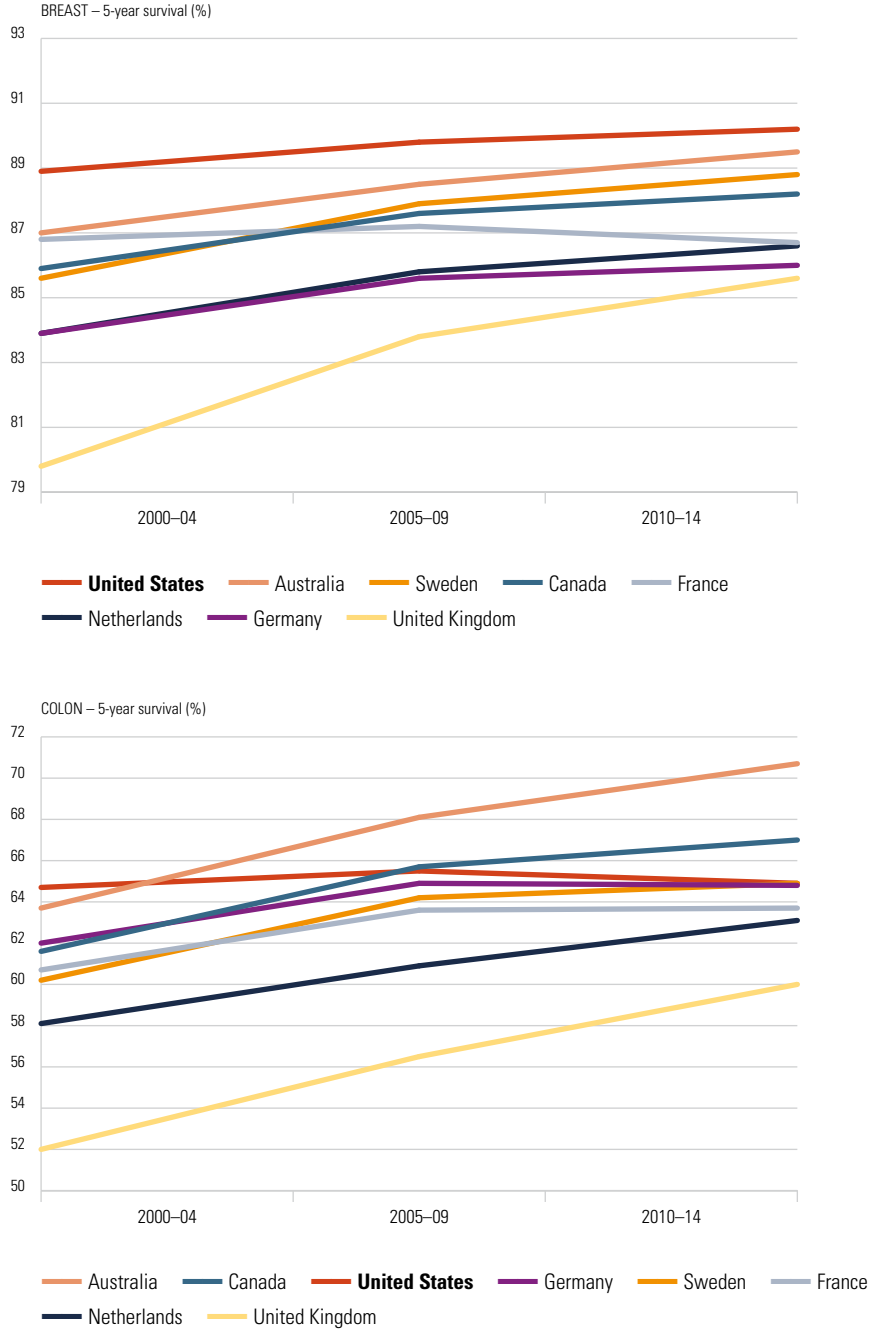
Source: OECD, 2018a

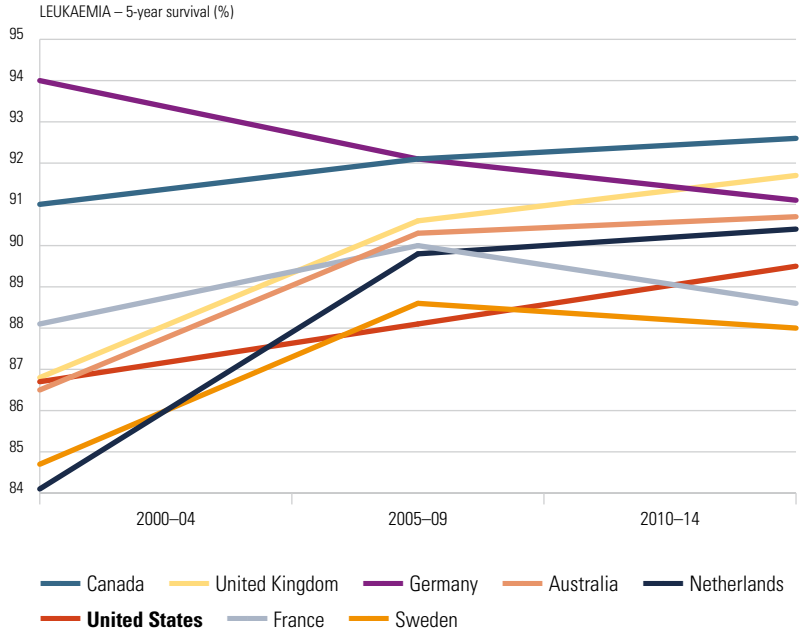
CANCER SURVIVAL

Cancer survival is often considered a good measure of the quality of a medical care system because high survival rates are related both to preventive (screening) care and to treatment success. Fig. 7.6 shows cancer survival rates in eight countries for three types of cancer that are amenable to treatment when detected early: breast (among women), colon and leukaemia (among children).

The United States has the highest survival rate for breast cancer, at 90%, and has been the highest over the ten-year period examined. Rates for the other countries are not too far behind, all exceeding 85%. The United States is closer to the average for colon cancer survival, at 65%. Again, the countries are fairly tightly bunched, all with rates between 65% and 71%. This is even more true for leukaemia survival, with all countries having rates in the narrow range of 88–91%, with the United States slightly lower than the average.

FIG. 7.6 Cancer survival rates for breast cancer (women), leukaemia (children) and colon cancer among eight countries since 2000



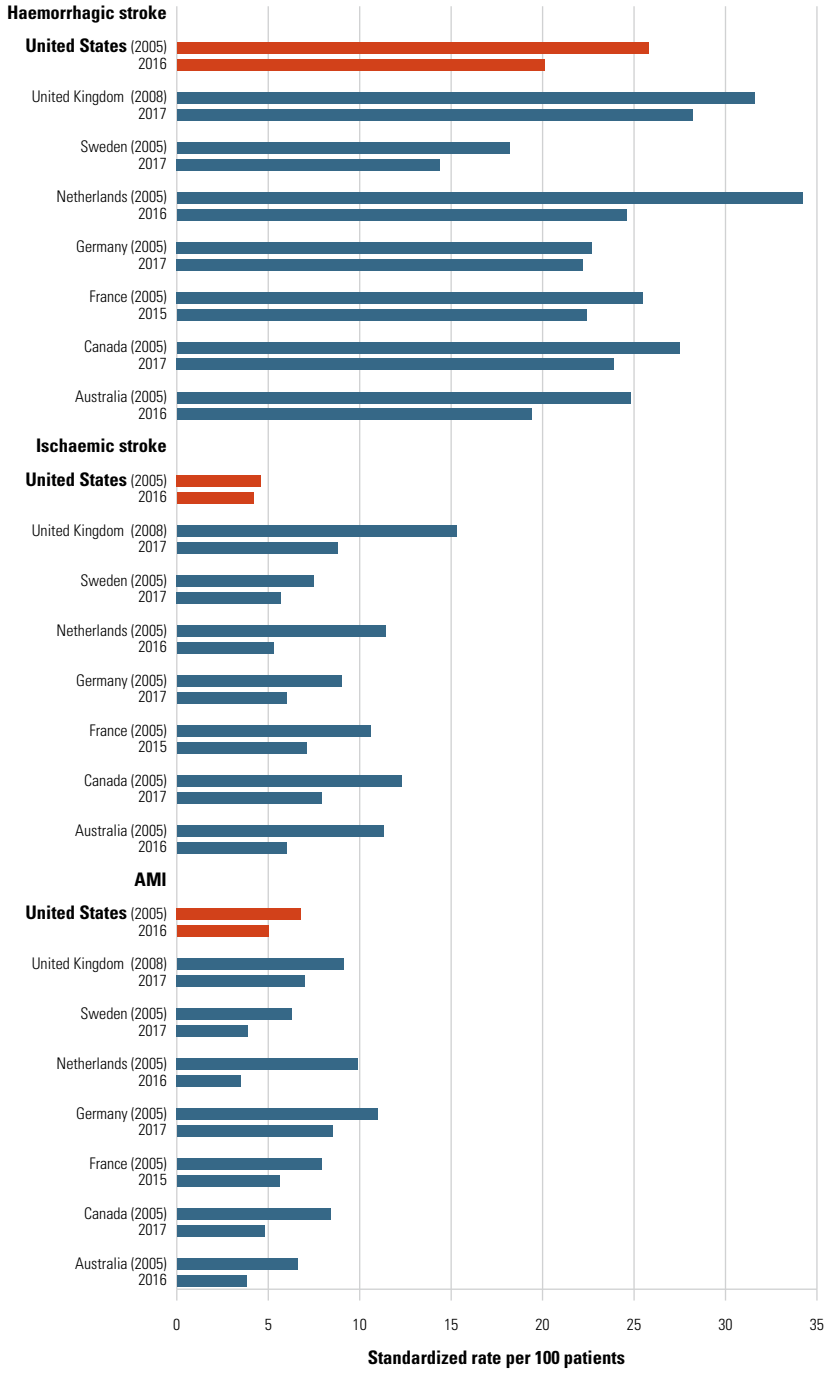


Source: Allemani et al., 2018

IN-HOSPITAL MORTALITY RATES

Fig. 7.7 shows in-hospital mortality (within 30 days of admission) for the same eight countries, for three illnesses: haemorrhagic stroke, ischemic stroke, and acute myocardial infarction (AMI). US performance varied by condition. It has by far the best rates with regard to ischemic stroke mortality, with figures one third less than the second best-performing country, and half those of Canada and the United Kingdom. In contrast, the United States ranked 6th in AMI mortality and 4th in haemorrhagic stroke mortality.

FIG. 7.7 In hospital mortality (within 30 days of admission) among 8 countries

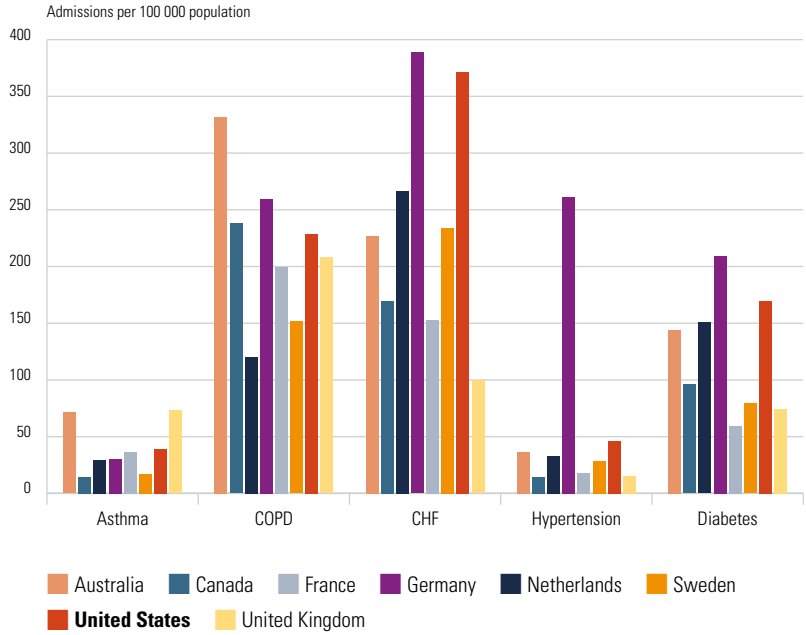


Source: OECD, 2019

AVOIDABLE HOSPITAL ADMISSIONS

Fig. 7.8 shows avoidable hospital admission rates among the same eight countries for five diseases and conditions: asthma, chronic obstructive pulmonary disease (COPD), congestive heart failure, hypertension and diabetes. In most cases the United States fares poorly in international comparisons, with the highest rate for asthma and the second highest for heart failure, hypertension and diabetes. It was among the median for COPD. The reason for its poor relative performance likely varies by disease/condition. In the case of asthma it most likely relates to cost-related access barriers. In the case of diabetes, high obesity rates are likely a cause.

FIG. 7.8 Avoidable hospital admission rates for asthma, chronic obstructive pulmonary disease, congestive heart failure, hypertension and diabetes-related complications among eight countries since 2005



Source: OECD, 2019

7.4.2 *Subjective measures*

Although objective measures of quality might normally be considered the 'gold standard', there are two reasons why subjective measures need to be considered as well. Firstly, perceptions do matter. If a patient or a physician believes that the care provided or some other aspect of a healthcare system is below par, this is a legitimate indicator of quality[16]. Secondly, for many measures of quality, objective data are not available in many countries. An example is medical errors. While studies of the prevalence of error rates have been conducted in some countries, they use different methodologies and time periods and generally are not comparable.

The leading source of subjective data for international comparisons is the Commonwealth Fund, using annual surveys of patients or physicians that have been conducted in up to 11 countries since 2007.

Table 7.6 examines three aspects of care coordination: (1) primary care doctors always or often receiving timely and relevant information after a patient sees a specialist; (2) primary care doctors always or often receiving information about changes to a patient's medication or care plan after a patient sees a specialist; and (3) specialists lacking medical history or regular doctors not informed about specialist care. The United States was at the median for the first measure of coordination, but third lowest for the second measure and tied for lowest in the third measure. Thus, compared to other countries, care coordination is a problem.

Table 7.7 examines patient safety. Three facets are shown: (1) a patient experienced a medical, medication or lab mistake; (2) a primary care physician reported electronic clinical decision support in their practice, and (3) a healthcare professional did not review medications in past year (among those taking two or more prescriptions). The United States had the second worst performance on the first measure, but the best performance on the last. Regarding electronic support, the United States performed above the median.

16 Economists, for example, generally view societal welfare based on the sum of individuals' 'utilities', which are subjective measures of well-being.

TABLE 7.6 Coordinated care, 2016

PERCENTAGE REPORTED:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Primary care doctor always or often receives timely and relevant information when needed after patient sees specialist	58	61	80	61	63	69	66	37	78	47	**62**
Primary care doctor always or often receives information about changes to a patient's medication or care plan after patient sees specialist	83	78	94	73	66	94	94	53	88	86	**72**
Specialist lacked medical history or regular doctor not informed about specialist care in the past two years	20	27	25	19	28	17	17	31	27	21	**31**

Source: Schneider et al., 2017

TABLE 7.7 Safe care, 2015 or 2016

PERCENTAGE REPORTED:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Experienced a medical, medication or lab mistake in the past two years	11	15	8	7	10	16	21	17	14	11	**19**
Primary care physician reports electronic clinical decision support in practice	72	28	28	13	22	70	28	16	13	81	**60**
Healthcare professional did not review medications in past year, among those taking two or more prescription medications	22	22	54	34	27	29	45	41	36	21	**17**

Source: Schneider et al., 2017

Table 7.8 examines three measures of the doctor-patient relationship: (1) regular doctor always or often spent enough time with patient and explained things in an understandable way; (2) doctor always treated patient with courtesy and respect during hospital stays; and (3) chronically ill patients discussed treatment options with their health professionals. In each of the three measures, US performance was around the median.

Table 7.9 examines three ways in which primary care practices report using medical records: (1) the practice uses electronic medical records; (2) the practice offers patients the option of emailing queries to practice providers; and (3) the practice offers patients the option to view online, download or transmit information from their medical record. The United States was not very different from average for the first two measures, but had the highest figure, by far, in allowing patients to use information electronically from their medical records.

TABLE 7.8 Engagement and patient preferences, 2016

PERCENTAGE REPORTED:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Regular doctor always or often spent enough time with them and explained things in a way they could understand	88	74	64	78	88	83	70	62	79	79	**77**
Doctors always treated the patient with courtesy and respect during their hospital stay	80	73	69	48	79	80	73	75	72	76	**74**
Chronically ill patients discussed with health professional their treatment options, including side- effects, in the past two years	67	57	61	60	57	62	32	30	59	54	**60**

Source: Schneider et al., 2017

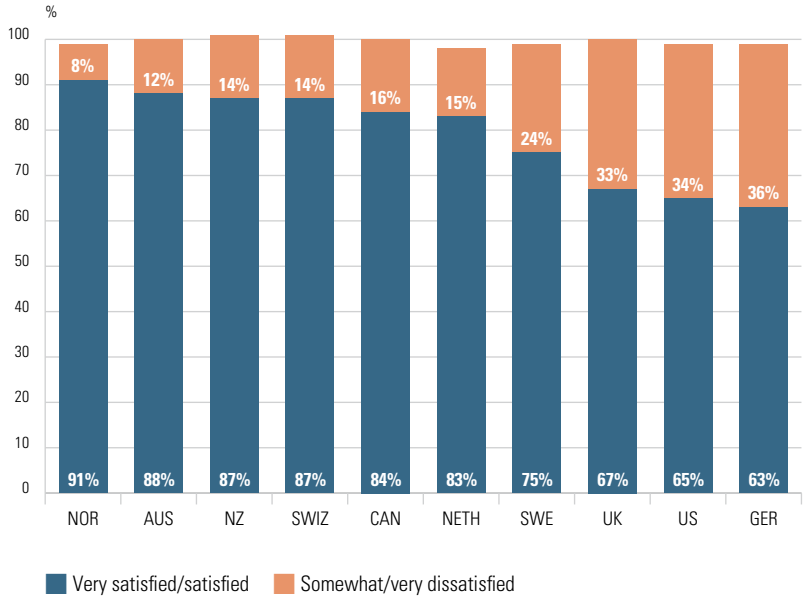
TABLE 7.9 Use of electronic medical records, 2015

PERCENTAGE OF DOCTORS REPORTING:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Primary care practice uses electronic patient medical records	92	73	84	98	100	99	99	54	98	84	**77**
Practice offers patients the option to e-mail about medical question or concern	30	15	50	57	53	32	61	80	38	57	**74**
Practice offers patients the option to view online, download or transmit information from their medical record	11	7	8	13	24	3	20	11	28	60	**60**

Source: Commonwealth Fund, 2015

Finally, we examine two aspects of physician satisfaction. Fig. 7.9 shows physician satisfaction with practising medicine in ten countries. Satisfaction in the United States is relatively low compared to most of the other countries, ranking 9th or 10th, with 36% reporting that they are somewhat or very dissatisfied. Fig. 7.10 shows that a major problem is the proportion of time spent on administrative issues or difficulty receiving payment. As in the previous graphic, US physicians are the second least satisfied, with more than half reporting this complaint.

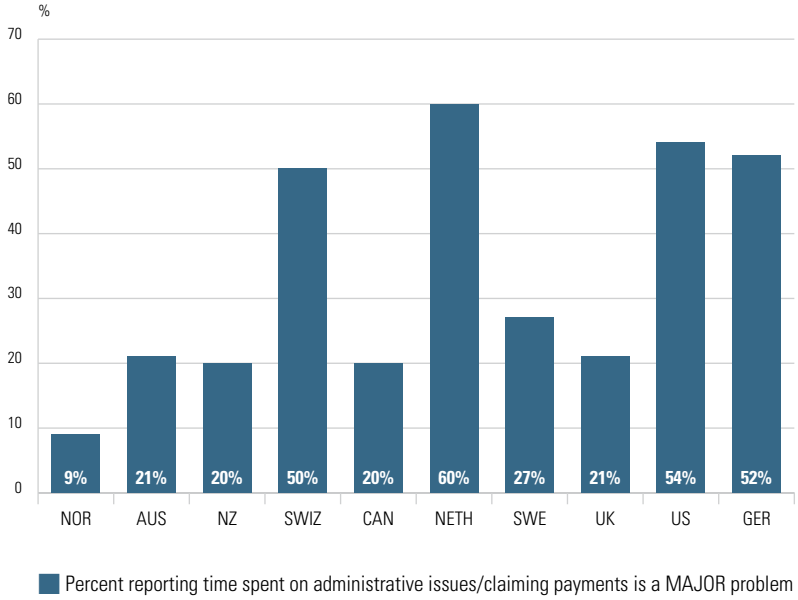
FIG. 7.9 Physician satisfaction with practising medicine among 10 countries, 2015



Note: Data may not total 100% due to rounding

Source: Osborne et al., 2015

FIG. 7.10 The time practices spend on insurance issues or claims payments is a major problem, 2015



Source: Commonwealth Fund, 2015

7.5 Health outcomes

7.5.1 *Population health*

This subsection examines both mortality and morbidity, as well as health risks and behaviours. Some of the material reviewed was presented earlier in Section 1.4.

The federal government commissioned a major study of how people's health in the United States compares with other high-income countries (Woolf & Aron, 2013). Entitled *Shorter Lives, Poorer Health*, it summarizes and analyses how and why US performance with regard to health outcomes often does not measure up. Some of the study's findings are summarized in Box 7.1.

MORTALITY

As discussed in Chapter 1, the United States ranked in the bottom quartile in life expectancy among 36 OECD countries in 2015, at 78.7 years in 2015, about two years below the median (Table 1.4). The only countries that are lower have per capita GDPs about half that of the United States: Estonia, Hungary, Latvia, Lithuania, Mexico, Poland, the Slovak Republic and Turkey. The relative position of the United States has fallen over time. As recently as 1980, US life expectancy was at the median, exceeding countries such as Austria, Belgium, Germany and the United Kingdom.

The reader is referred to Section 1.4.1 for a more extensive discussion of US infant mortality rates and how they compare to the rest of the world. The US rates have declined substantially over the past three decades but not as fast as other countries. As a result, it ranks among the highest in OECD countries in infant mortality, exceeded only by Mexico and Turkey (see Table 1.6).

An international statistic that receives much attention is mortality amenable to healthcare, which is defined as 'premature deaths from causes that should not occur in the presence of timely and effective health care' (Nolte & McKee, 2011). Over 30 causes of death have been defined as amenable to healthcare interventions, which can be summarized as 'childhood infections, treatable cancers, diabetes, cerebrovascular disease

BOX 7.1 *Shorter Lives, Poorer Health*

In March 2013 a major study of US performance in the area of health, commissioned by the federal government, was released. Entitled, ***Shorter Lives, Poorer Health*** (Woolf & Aron, 2013), it was produced by a panel of experts assembled by the National Research Council and the Institute of Medicine (now, the National Academy of Medicine), both part of the National Academy of Sciences, a private, non-profit society of distinguished scholars.

The report presented and analysed evidence on US performance compared to 16 other high-income countries as well as the reasons explaining why the United States often performed more poorly. Some of the findings include:

- Life expectancy in the United States is lower than in other high-income countries, and this gap has increased over time, particularly for women.
- The gap affects all ages, and nearly all groups of the population, until Americans reach their senior citizen years.
- Nine areas in particular were identified: birth outcomes, injuries and homicides, early pregnancy and STDs, HIV/AIDS, substance abuse, obesity and diabetes, heart disease, lung disease and disability.
- Two thirds of the gap in life expectancy is the result of deaths before the age of 50, and for the large majority who do reach that age, they are on average in poorer health than their counterparts in other countries.
- Even among the highest socioeconomic classes, average health outcomes are poorer.

No single factor explains most of the differences. Partly it appears to be due to the healthcare system, partly to individual behaviours and partly to socioeconomic and environmental factors.

With respect to the health system, the United States is strong with respect to cancer screening, and the control of blood pressure and cholesterol. Deficiencies include 'systems to manage illnesses with ongoing, complex care needs' (p. 132), with particular problems of fragmentation, poor coordination, and miscommunication that leads to medical errors. This is aggravated by the fact that a sizeable portion of the population does not have financial access to primary care.

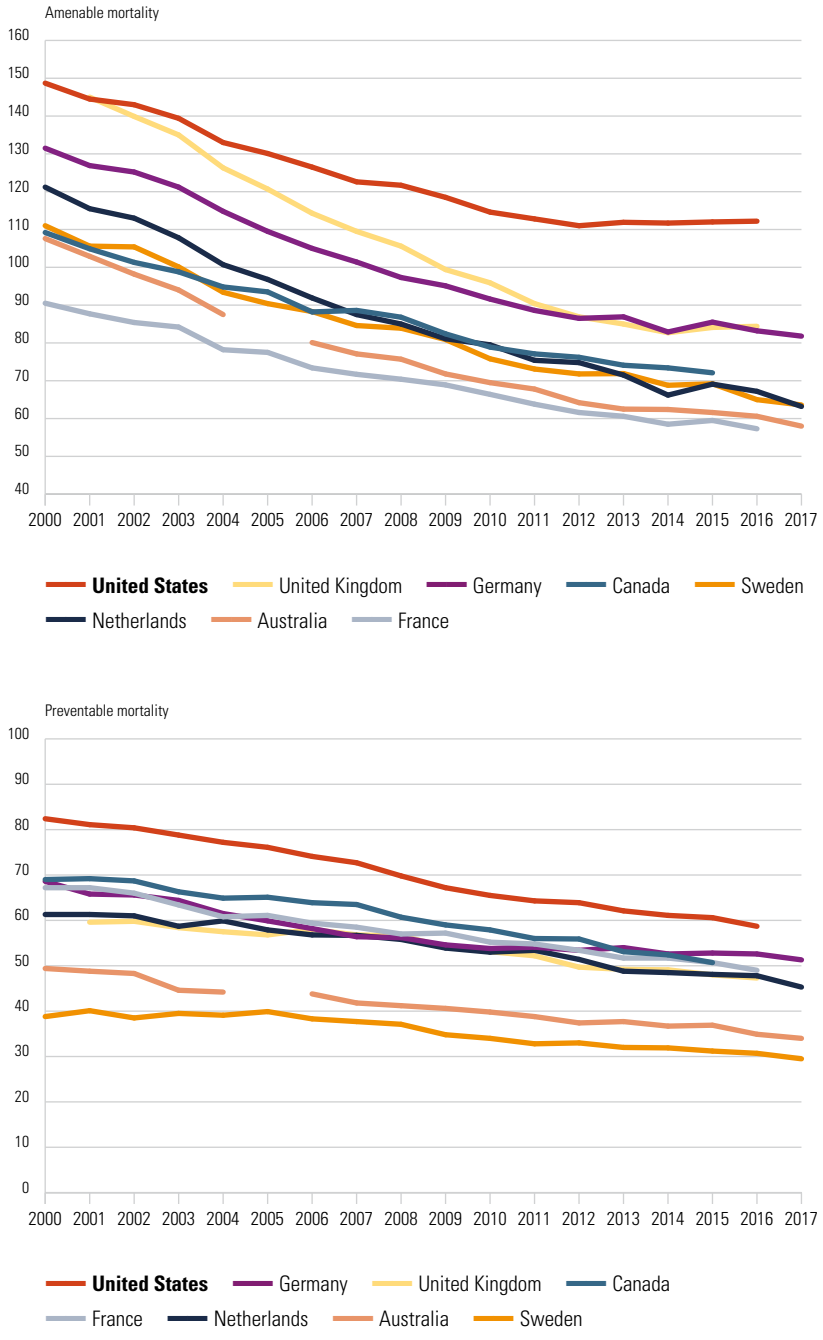
Non-health system factors include poor diet and lack of exercise, leading to obesity and diabetes, and socioeconomic and environmental factors, including an exceedingly high rate of violence-related deaths, particularly among younger cohorts.

and hypertension, and complications of common surgical procedures'. In addition, the measure includes half the deaths from ischaemic heart disease as amenable. For most of these conditions, only deaths occurring before the age of 75 were considered, although in a few instances lower age thresholds were used (e.g. cervical cancer before the age of 45).

A related statistic is preventable mortality, which is defined as deaths that should have been avoided by public health interventions, 'such as behaviour and lifestyle factors, socioeconomic status and environmental hazards' (Eurostat, 2018). Fig. 7.11 shows both amenable and preventable mortality for the United States and seven other high-income countries between 2000 and 2017. The United States shows the highest rates for both measures. In 2016 the gap between the United States and the next highest country was quite considerable for amenable mortality. While amenable mortality rates have been generally declining for all of the countries, they fell faster elsewhere. In 2001, for example, the United States and the United Kingdom had nearly identical rates.

There is a new index available that is a refinement of amenable mortality, called the Healthcare Access and Quality (HAQ) index. It was developed in collaboration with researchers all over the world. Like mortality amenable to healthcare, the HAQ rates countries on their success in keeping people alive from afflictions that should not cause death if treated in a timely and high-quality manner by a country's healthcare system. It purports to improve on amenable mortality in three ways: (1) to improve data comparability across countries by accounting for discrepancies in cause of death; (2) to better account for health risks, especially in cardiac deaths, that may be due to individual risk factors rather than access to and quality of care; and (3) to go beyond high-income countries to examine HAQ for 195 countries (GBD 2015 Healthcare Access and Quality Collaborators, 2017). As is the case with amenable mortality, the US index is considerably lower than in the other comparison countries.

FIG. 7.11 Preventable and amenable mortality since 2000 among eight countries



Notes: 2000–2017 unless stated otherwise

Sources: Mortality and population data from WHO detailed mortality files (released December 2019). Amenable causes as per list by Nolte & McKee, 2004. Age-standardized death rates for all persons, calculated by European Observatory for Health Systems and Policies; contact: marina.karanikolos@lshtm.ac.uk

Typical explanations for the poor US performance compared to other countries with respect to amenable mortality rates include 'a high rate of uninsured and a fragmented delivery system with relatively weak primary care and poor coordination of care between providers and sites' (Schoenbaum et al., 2011). One other common explanation – that the United States has a more socioeconomically diverse population than other countries – is rejected by Muennig and Glied (2010). They point out that 'fifteen-year survival for non-Hispanic whites is deteriorating more rapidly relative to other comparison nations than is survival for Americans overall [and that] high homicide and accident rates also do not appear to explain poor US performance in health outcome measures' (p. 2111). Preston and Ho (2010), however, contend that the measure of amenability is flawed. Of particular concern was the inclusion of only 50% of ischaemic heart disease deaths as being amenable to medical care. This, they argue, puts the United States at a disadvantage since 'other studies show that the U.S. does relatively well in treating cardiovascular disease [so] it seems inaccurate to attribute its high death rates from these causes to a poorly performing medical system'. Preston and Ho also question other inclusion criteria. For example, prostate cancer is not included as amenable even though survival rates in the United States are reportedly over 99%, higher than other countries.

The question of central importance to health policy analysts is the extent to which the US healthcare system, in and of itself, is responsible for the poor US showing. Not surprisingly – especially in light of the difficulties in securing comparable cross-national data and disentangling causal relationships in the absence of randomized controlled studies – the question is difficult to resolve.

Part of the explanation for the poor US performance is probably related to problems associated with access to healthcare. But once a person has access to the US system, how well does it perform? There is a divergence of opinion on this as well. Docteur and Berenson (2009), reviewing a variety of diseases, find that US performance compares well internationally in some areas (e.g. cancer screening and survival) and worse in others (e.g. asthma, medical errors), and conclude that the 'overall evidence is mixed, indicating that the U.S. has neither the best nor the worst quality of health care for particular conditions among high-income countries' (p. 4).

Research by Preston and colleagues reaches a more positive conclusion on the performance of the US system. For the two leading chronic

diseases – cancer and heart disease – US performance rates are very high. For example, five-year survival rates for each of eight cancers are higher in the United States than in Europe, exceeding Europe on average by over 20 percentage points for prostate cancer and over 10 percentage points for breast cancer (Preston & Ho, 2010). For heart disease, the evidence is less definitive, but more Americans use more cholesterol-lowering drugs and heart medications, and are more likely to obtain treatment when they have high blood pressure, than Europeans (Crimmins, Preston & Cohen, 2011).

While researchers still disagree, it appears most likely that the United States performs worse than other countries, particularly with respect to mortality among people under the age of 50, and does not compare favourably to other countries until about the age of 65, when nearly everyone is eligible for Medicare (Woolf & Aron, 2013). More research on the topic is necessary before definitive conclusions can be drawn.

MORBIDITY

Since the 1990s, most measures of morbidity have improved or remained steady in the United States. Trends for selected diseases and other measures of health status are noted here. Unless otherwise stated, all data are from US Department of Health and Human Services (2017).

Heart disease: prevalence rates (self-reported) for men were steady between 2000 and 2016 but declined by 7% for women, so overall rates declined somewhat. Rates are probably declining due to a combination of reduced risk factors (e.g. lower cholesterol, blood pressure and smoking) and improved medical treatments – although increases in obesity and overweight would have worked in the opposite direction.

Stroke: rates (self-reported) showed an opposite pattern – they have risen for both men (13%) and women (19%) between 2000 and 2016. Increases in stroke are particularly noteworthy among younger people. Prevalence rates for men aged 18–44 more than doubled over this time period, and rose by about 25% for younger women as well. A major cause of the increase appears to be increases in overweight and obesity. Rates are also increasing for children, mainly for the same reasons but also, most likely, due to advances in the accurate diagnosis of stroke (George et al., 2011).

Cancer: overall cancer prevalence rates (self-reported) increased by 22% between 2000 and 2016. The increase is concentrated among adults aged 45 and older, with rates steady for younger adults. One needs to interpret these trends with care for several reasons: trends vary considerably by site of cancer; trends are highly dependent on the time interval examined and whether incidence or prevalence is being reported; some of the increase is due to increased diagnosis rather than increases in cancer itself (e.g. prostate cancer); and lower death rates from cardiovascular diseases make it more likely a person will develop cancer before they die.

Diabetes: rates rose by 20% between 1999/2002 and 2011/2014. Of the 12% of the population aged 20 and older who were estimated to have diabetes in the most recent period, only 9% reported to have received this diagnosis from a physician. The others were found to have the disease through a health examination that was conducted as part of a large US government study. Undiagnosed diabetes fell by 9% over this period, but diagnosed diabetes rose by 27%. Much of the increase is attributed to overweight and obesity, which usually stem from a high caloric diet and/or lack of physical activity.

Children's health: the percentage of children having an asthma attack in the past year declined by 23% between 2000/2002 and 2014/2016 while rates for attention deficit hyperactivity disorder rose 32% over this same period. Autism rates are skyrocketing, as they are in many parts of the developed world, with its prevalence rising 2.5-fold between 2000 and 2014 (CDC, 2019b). It is still unknown whether these increases in children's developmental and psychological problems are entirely the result of more reporting of existing conditions or if there are environmental or other triggers. Dental health has improved, with a reduction in untreated dental caries among children of nearly 17% between 1999/2002 and 2011/2014.

It should not be concluded that children's health in the United States is poor. In 2016 only 1.6% of children below the age of 18 were reported to be in fair or poor health.

Self-reported health status: this has also been steady among adults between 2000 and 2016. The overall figure, however, masks a curious trend: noticeable declines among those aged 18–44 but considerable improvement for those aged 65 and older. One possible explanation would be increased opioid use among the younger of the two age groups.

Overall, self-reported health status is quite high in the United States compared to other countries, with 88% of the population reporting 'good' or 'better' health in 2016. The only other OECD countries with comparable rates are Canada and New Zealand (OECD, 2018a). It is difficult to fully understand the meaning of these international comparisons since language and culture are likely to play a large part in people's responses, but the high US figures are nevertheless noteworthy.

HEALTH RISKS AND BEHAVIOURS

Section 1.4 presented statistics on several health risks and behaviours, including smoking (Tables 1.10), diabetes, high cholesterol, overweight/obesity, untreated dental caries (Table 1.11) and alcohol use (Table 1.13). Compared to the other high-income OECD countries (N=31), the United States ranks somewhat below the median in alcohol consumption, among the lowest with regard to the percentage of the population who smoke, but highest among all OECD countries in obesity (OECD, 2018a).

Hypertension rates,[17] defined either as having high blood pressure or taking antihypertensive medicine, have been steady since 2000, at about 30% of the adult population. This masks an important trend, however: uncontrolled hypertension has been declining, from 71% to 55% of hypertensives between 1999/2000 and 2013/2016. Since obesity increased over this time period, it is possible that declining hypertension rates resulted in part from more people taking prescription drugs to lower their blood pressure.

High cholesterol,[18] which includes either having a high reading or taking cholesterol-lowering medication, has risen by 11% between 1999/2002 and 2013/2016. This is likely correlated with the rise in obesity.

Finally, while Americans do not show high amounts of physical activity, the amount has risen over time. The United States has developed guidelines for what is considered adequate engagement in aerobic and muscle-strengthening activities[19]. The percentage of adults who meet both the aerobic and strengthening guidelines rose from 15% to 23% between 2000 and 2016, while the percentage meeting neither fell from 55% to 44%.

17 Hypertension is defined as a systolic pressure of at least 140 mmHg, or diastolic pressure of at least 90 mmHg.

18 High cholesterol is defined as at least 240 mg/dL.

19 Definitions of aerobic and muscle-strengthening exercises are found in US Department of Health and Human Services (2008).

7.5.2 *Equity of outcomes*

The United States suffers from major inequities or disparities in access to healthcare as well as in health outcomes. These disparities are the result of a number of factors. Some relate to inequities in the way in which the healthcare system operates. Others relate to access to the system. Yet others relate to personal behaviours, the determinants of which are mainly a result of larger social forces outside the healthcare system.

The literature on disparities is voluminous and burgeoning. A few of the more noteworthy disparities are discussed here (Office of Disease Prevention and Health Promotion, 2019). Beginning with infant mortality, it was noted earlier that US rates are higher than those of other high-income OECD countries. In 2016 the rate for Whites, Asians/Pacific Islanders and Hispanic/Latinos was 5 or fewer per 1000 live births, but it was more than double that (11.2) for Black/African Americans. Infant mortality also varies considerably by state, with the rates in three New England states (3.9–4.1) less than half of that in Mississippi (8.9) (Statista, 2019b). Given the racial differences just noted, it is not surprising that the states with the highest rates tend to have higher proportions of African American residents. Life expectancy at birth shows similar patterns: Whites have, on average, a 3–4 year greater life expectancy than African Americans (US Department of Health and Human Services, 2017, Table 15).

This disparity between African Americans and other races also holds for certain diseases. Diabetes rates, for example, are more than twice as high among African Americans as Whites. There are disparities by income as well. In the case of diabetes, rates for those below the FPL are more than 50% higher than those of people between 200 and 400% of FPL – something that cannot be adequately explained by diet and genetic factors alone. While they play a strong role in diabetes, disparities in treatment, related to both the medical care system itself and access to it, are partly responsible.

One of the biggest racial disparities is for homicides. Rates for Blacks/African Americans were 23 per 100 000 population in 2016, more than 10 times the rates for Asians/Pacific Islanders, four times as great as Hispanic/Latinos, and eight times as high as Whites.

Similarly, there are different cancer survival rates according to race. Overall five-year survival rates in the 2007–2013 period were 70% for Whites compared to 63% for Blacks/African Americans. Among 10 of the most

common types of cancer, Whites had higher survival rates for all of them (US Department of Health and Human Services, 2017, Table 37).

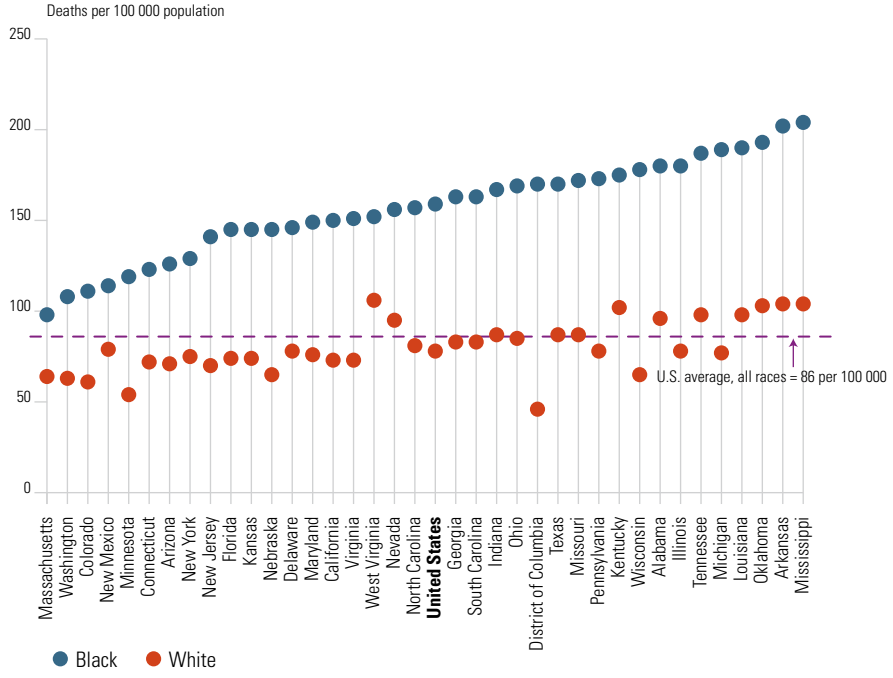
There are also gender disparities. The extent of disparities varies by disease. An area that has received much attention is disparities in cardiovascular care. One study examined treatment of a particular type of myocardial infarction, using a national database of inpatient stays (Turk, Nakhle & Ward, 2019). It found that men were considerably more likely to receive coronary angiography and revascularization, which may help explain why women who had certain kinds of heart attacks died more frequently than men.

The Commonwealth Fund (2018) has rated each of the 50 states with respect to their performance in health. The research assesses performance relative to what is achievable, based on benchmarks for over 40 indicators of access, quality, efficiency, health outcomes and disparities. Many comparisons are presented between the highest or lowest scoring states [20]. Beginning with mortality, Fig. 7.12 shows amenable mortality rates by state and by race for 2009–2010. Rates between the best and worst performing states vary as much as two-fold, and in general, the worst performing states show the clearest racial disparities between Whites and Blacks. Again, these differences result from factors related to healthcare and access to it as well as forces beyond the system such as socio-economic and personal behaviours.

Racial disparities in outcomes are prevalent throughout the US healthcare system and go beyond mortality amenable to healthcare. As noted, African American infant mortality rates are more than double those of Whites. African Americans and Hispanics are 50% or more likely to rate their health as being fair or poor (NCHS, 2019).

20 According to the report, the five best performing states are Hawaii, Massachusetts, Minnesota, Vermont and Utah. The five states with the worst overall performance are West Virginia, Florida, Louisiana, Oklahoma and Mississippi.

FIG. 7.12 Mortality amenable to healthcare by race, state variation, 2009–2010



Notes: Data for Black population are not available for Alaska, Hawaii, Idaho, Iowa, Maine, Montana, New Hampshire, North Dakota, Oregon, Rhode Island, South Dakota, Utah, Vermont or Wyoming. States are arranged in rank order based on black mortality. Data: 2004–05 and 2009–10 National Vital Statistics System (NVSS) mortality all-country micro data files

Source: Commonwealth Fund Scorecard on State Health System Performance, 2014

7.6 Health system efficiency

In the United States there is much interest in maximizing the value of healthcare services. As discussed earlier in the chapter and throughout the book, a number of health processes in the United States are flawed and health outcomes are often low. At the same time expenditures are extremely high in comparison with other countries. On a number of measures, the United States does not compare well to many other high-income countries, which continue to have much lower expenditures, universal access and oftentimes better measures of quality. Moreover, there is considerable socioeconomic and geographical variation within the United States on these criteria.

7.6.1 *Allocative efficiency*

Allocative efficiency relates to whether a society's resources are being spent in the manner that is most beneficial to that society. Relating this to healthcare, a healthcare system is operating efficiently if its resources are being spent in a way that best benefits the overall health and well-being of the population. No healthcare system, of course, operates efficiently by this definition, but a goal of public policy should be to move towards this ideal.

Allocative efficiency comprises three elements. One is technical efficiency, which is discussed below. A second element is whether the right goods and services are being produced. Technically efficient production of the wrong goods obviously falls short of allocative efficiency. The third element concerns how the goods that are produced are distributed.

The second and third elements of allocative efficiency are discussed here, beginning with whether the right goods and services are being produced. Issues include site of services (e.g. inpatient vs outpatient), mix of inputs (e.g. equipment vs labour vs drugs), mix of labour (e.g. specialist physicians vs primary care vs nurses vs psychologists) and mix of services.

Assessing whether the United States is using the 'right' mix is extremely difficult. Compared to other countries, the United States: uses inpatient care less often; is highly capital and technology-intensive; appears to employ specialists to a somewhat greater extent; and has a mix of services oriented in many ways less towards health promotion and more towards intensive treatment of illness and end-of-life care. To assess allocative efficiency in this regard, it is necessary to examine population preferences, but it is difficult to find reliable sources that examine these issues. Moreover, such data would need to be interpreted very carefully since, as stated in the case of soliciting Americans' views on national health insurance, 'polling questions tend to disguise the more complex reality of the situation' (Blendon et al., 2006, p. 640).

The third part of allocative efficiency concerns whether healthcare goods and services are being distributed in a way that is consistent with the health needs and tastes of the population. Here it is useful to distinguish between issues of efficiency (the focus here) and those related to equity (discussed in Section 7.2). It is nearly impossible to make definitive statements, however, about the desires of the population with regard to health policy. This

is illustrated by the fact that since the ACA's passage 10 years ago, the population has continued to be split over whether they favour or oppose the Act (Kaiser Family Foundation, 2019f). A majority of Americans say they would like to see 'Medicare-for-all, in which all Americans would get their insurance from a single government plan' (Kaiser Family Foundation, 2019g). However, people tend to respond less favourably to such questions when told they have to pay more in taxes (Kaiser Family Foundation, 2020c).

Equity and distributional issues have been discussed throughout this chapter as well as in the other parts of this book. Briefly, most of the concerns are related to disparities in access to insurance and care, as well as differences in healthcare processes and outcomes according to socioeconomic characteristics. In Section 7.2 it was shown (among other things) that those with low incomes and individuals and families of Latino origin are far more likely to lack health insurance, the consequence of which is lower use of services due to cost impediments and lack of access to a regular provider of care. The last of these produces its own deleterious consequences, including lack of receipt of many preventive services and initial treatment of chronic diseases such as cancer at a later stage. It was also shown that African Americans have much poorer outcomes than Whites in indicators such as infant mortality, cancer survival and diabetes.

7.6.2 *Technical efficiency*

It is beyond the scope of this book to examine the precise relationships between inputs and outputs in the production of health services. Instead, the focus here is on one aspect of technical efficiency: the extent to which healthcare spending is directed at patient care rather than administration. Everything else being equal, a healthcare system is operating in a more technically efficient manner if resources expended go directly to patient care.

The issue is nuanced, however. Spending, say, by private insurers on activities such as utilization management is usually thought of as an administrative activity in which resources are being diverted from patient care. But insurers and managed care companies argue that these administrative costs cut unnecessary utilization and expenditures. In fact, to implement the ACA it was necessary to determine which of such costs are indeed counted

towards patient care, which in itself creates an administrative burden on both the federal government and insurers. The ACA requires that 80 cents (individuals and small groups) or 85 cents (large groups) of each dollar of premiums be returned to policy-holders in the form of health services or quality improvement.

Administrative costs are considerably higher in the United States than in other countries. Private insurers usually operate on a for-profit basis and seek returns for investors. They market through advertising, determine whether a person or group should be eligible to purchase private coverage, and process claims. Obtaining payment from insurers – both public and private – often involves considerable administrative effort. Hospitals and physician groups require substantial resources for administration in dealing with multiple private insurers as well as government programmes.

Cutler and colleagues (Cutler & Ly, 2011; Pozen & Cutler, 2011) report the following in comparing administrative costs in the United States vs. Canada:

- Hospital and physician spending in the United States are $1589 per capita higher than in Canada (2002 data). Of this, 39% is due to higher administrative costs, with 31% due to higher provider incomes and 14% a result of additional hospital procedures.
- On a per capita basis, the United States has 44% more administrative staff than does Canada, and US physicians report that they spend 13% of their time on administration compared to 8% for Canadian physicians.
- The United States employs 1.5 administrators per hospital bed, compared to 1.1 in Canada[21].
- The United States has 25%, 165% and 215% more healthcare administrators than the United Kingdom, the Netherlands and Germany, respectively.

A study by Papanicolas and colleagues (2018), published in *JAMA*, compared the 'drivers of spending' responsible for the United States being so much higher than in 10 comparable countries. It concluded that the main reasons were higher prices paid for hospitals, physician services and pharmaceutical drugs, as well as high administrative costs. At the same

21 To illustrate, the authors note Duke University Hospital, an academic medical centre in North Carolina, which employed 1300 billing clerks for 900 beds.

time, it rejected some other explanations such as 'underinvestment in social programs, the low primary care/specialist mix, the fee-for-service system encouraging high volumes of care, or defensive medicine leading to overutilization…' (p. 1034).

The Commonwealth Fund (2017) study discussed earlier reports on three measures of administrative efficiency among 11 countries. Major problems identified in the report were: (1) time physicians spend on administrative issues related to insurance or claims; (2) time spent on getting patients medications or treatments due to coverage restrictions; and (3) spending a lot of time on paperwork or disputes relating to medical bills. The results are shown in Table 7.10. The United States was among the three countries where doctors reported these problems most commonly (along with France and the Netherlands), and had by far the greatest problems for the second measure. As many as 54% of US physicians reported that time spent on getting patients medications or treatments due to coverage restrictions was a major problem. No other country had a figure higher than 38%.

TABLE 7.10 Indicators of administrative efficiency, 2015

PERCENTAGE OF DOCTORS REPORTING:	AUSTRALIA	CANADA	FRANCE	GERMANY	NETHERLANDS	NEW ZEALAND	NORWAY	SWEDEN	SWITZERLAND	UNITED KINGDOM	UNITED STATES
Doctors report time spent on administrative issues related to insurance or claims is a major problem [a]	21	20	63	52	60	20	9	27	50	21	**54**
Doctors report time spent getting patients needed medications or treatment because of coverage restrictions is a major problem [a]	11	21	27	38	32	12	6	6	14	15	**54**
Spent a lot of time on paperwork or disputes related to medical bills	5	5	28	5	8	3	5	3	11	0	**16**

Note: [a] = data from 2015

Source: Schneider et al., 2017

8

Conclusions

It is difficult to generalize about the US healthcare system and, accordingly, hard to draw overall conclusions about its performance. In some respects, it is unquestionably among the best in the world, yet in other respects there are significant shortcomings.

One factor that sets the United States apart from its counterparts is the more limited government involvement. Historically, there has been distaste for central planning, lack of control over the dissemination of medical technologies, reluctance to take advantage of the potential bargaining power afforded through large government insurers, the lack of centralized prices and prospective budgeting and, most importantly, the absence of guaranteed insurance coverage.

There is general agreement that reforms are necessary to control spending, although the two political parties have far different visions, with the Democrats favouring more government oversight and control, and the Republicans believing that relying on market forces is superior. Since the first edition of this book was published in 2013, there has been no real progress in merging these divergent paths. Nor is there agreement on whether there is a quality problem, nor much agreement on the need to provide coverage for those who remain uninsured.

It appeared that the passage of the Affordable Care Act in 2010 would propel the country in the direction of universal coverage through a synergistic blending of public and private coverage. This has not been the case, however: since its passage it has been under continuing threat of repeal both by Congress and the courts. At the time of writing those threats have not abated.

The US healthcare system is a behemoth, costing $3.6 trillion in 2018. This level of expenditure is exceeded by the entire GDPs of only three other countries in the world: China, Japan and Germany. On a per capita basis, it averages twice that of a group of 12 comparably wealthy countries. Government represents only about half of the spending. Thus, changing the healthcare system involves far more than just government action, although government must take the lead. But irrespective of the direction that government policy takes, changing the healthcare delivery system will take a great deal of time and the active participation of huge numbers of private organizations. The types of change needed to improve efficiency and enhance equity therefore will not result from legislation and government regulation alone. Rather, they need to be pursued and supported by both the public and private sectors as each grapples with the cost, quality and access issues they face. They also hinge on changing individual and provider behaviours.

Americans face an equally daunting challenge: the lack of effective dialogue, much less consensus, on how to improve their healthcare system. There is very little agreement between – or even within – the Democratic and Republican parties on the solutions to problems and, with a few exceptions, little in the way of working towards common solutions. Solving the most vexing healthcare financing, delivery and policy issues depends as much on finding common ground as it does on evidence generated by medical, social, behavioural and organizational sciences.

9

Appendices

9.1 References

AACN (2017). Nursing faculty shortage fact sheet. American Association of Colleges of Nursing. Available at: https://www.aacnnursing.org/Portals/42/News/Factsheets/Faculty-Shortage-Factsheet-2017.pdf (accessed 1 July 2020).

AALTCI (2019). Long term care insurance facts statistics. American Association for Long Term Care Insurance. Available at: http://www.aaltci.org/long-term-care-insurance/learning-center/fast-facts.php, accessed 1 July 2020).

AAMC (2017). 2017 State physician workforce data report. Association of American Medical Colleges. Available at: https://store.aamc.org/2017-state-physician-workforce-data-report.html (accessed 1 July 2020).

AAMC (2018). The complexities of physician supply and demand: projections from 2016–2030. Association of American Medical Colleges. Available at: https://aamc-black.global.ssl.fastly.net/production/media/filer_public/85/d7/85d7b689-f417-4ef0-97fb-ecc129836829/aamc_2018_workforce_projections_update_april_11_2018.pdf (accessed 1 July 2020).

AANP (2018). State practice environment. Updated 12/20/2018. American Association of Nurse Practitioners. Available at: https://www.aanp.org/advocacy/state/state-practice-environment (accessed 1 July 2020).

AARP (2015). Caregiving in the US: 2015 Report. June 2015. American Association of Retired Persons Public Policy Institute and the National Alliance for Caring. Available at: https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf (accessed 1 July 2020).

AARP (2018). Medicare beneficiaries' out-of-pocket spending for health care. American Association of Retired Persons. Available at: http://www.aarp.org/content/dam/aarp/research/public_policy_institute/health/medicare-beneficiaries-out-of-pocket-spending-AARP-ppi-health.pdf (accessed 20 August 2018).

Abaluck JT, Gruber J (2009). Choice inconsistencies among the elderly: evidence from plan choice in the Medicare Part D Program. National Bureau of Economic Research (NBER). Working Paper no. 14759. Available at: http://www.nber.org/papers/w14759 (accessed 1 July 2020).

Abelson R (2009). Insured, but bankrupted by health crises. *New York Times*, 1 July 2009.

Abelson R (2010). In health care overhaul, boons for hospitals and drug makers. *New York Times*, 21 March 2010.

Abelson R, Harris G, Pear R (2011). Whatever court rules, major changes in health care likely to last. *New York Times*, 14 November 2011.

ABMS (2018). ABMS guide to medical specialties. American Board of Medical Specialties. Available at: https://www.abmsdirectory.com/pdf/Resources_guide_physicians.pdf (accessed 1 July 2020).

Abrams M et al. (2011). Realizing health reform's potential: how the Affordable Care Act will strengthen primary care and benefit patients, providers, and payers. The Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2011/jan/realizing-health-reforms-potential-how-affordable-care-act-will (accessed 1 July 2020).

Abramson EL, McGinnis S, Moore J, Kaushal R (2014). A statewide assessment of electronic health record adoption and health information exchange among nursing homes. *Health Services Research*, 49 (1pt2):361–72.

ACEP (2017). Urgent care centers. *Annals of Emergency Medicine*, 70(1):115–16.

ADA (2012). Breaking down barriers to oral health for all Americans: the role of finance. A statement from the American Dental Association, April 2012. Available at: http://www.ada.org/~/media/ADA/Public%20Programs/Files/barriers-paper_role-of-finance.ashx (accessed 1 July 2020).

Adams AS, Soumerai SB, Ross-Degnan D (2001). The case for a medicare drug coverage benefit: a critical review of empirical evidence. *Annual Review of Public Health*, 22:49–61.

Adams JG (2013). Emergency department overuse: perceptions and solutions. *JAMA*, 309(11):1173–4.

Adamy J (2011). Steep rises in health premiums scrutinized. *Wall Street Journal*, 30 August 2011. Available at: http://online.wsj.com/article/SB10001424053111903352704576538873548366708.html (accessed 1 July 2020).

Adler-Milstein J, DesRoches CM, Jha A (2011). Health information exchange among US hospitals. *American Journal of Managed Care*, 17(2):761–8.

Adler-Milstein J, Holmgren AJ, Kralovec P, Worzala C, Searcy T, Patel V (2017). Electronic health record adoption in US hospitals: the emergence of a digital 'advanced use' divide. *Journal of the American Medical Informatics Association*, 24(6):1142–8.

Adler-Milstein J, Salzberg C, Franz C, Orav EJ, Newhouse JP, Bates DW (2013). Effect of electronic health records on health care costs: longitudinal comparative evidence from community practices. *Annals of Internal Medicine*, 159(2):97–104.

Advisory Board Company, Foundation KF (2008). Experts testifying before senate panel extol incentives, standardization as means to improve quality of care. Medical News Today, 11 September 2008.

AHA (2015). Teaching hospitals: preparing tomorrow's physician's today. American Hospital Association: Trendwatch. Available at: https://www.aha.org/system/files/research/reports/tw/15june-tw-teachinghosp.pdf (accessed 20 October 2020).

AHA (2017). Underpayment by Medicare and Medicaid Fact Sheet. December. American Hospital Association. Available at: https://www.aha.org/system/files/2018-01/medicaremedicaidunderpmt 2017.pdf (accessed 18 May 2018).

AHA (2018a). Trendwatch chartbook 2018. Trends affecting hospitals and health systems. American Hospital Association. https://www.aha.org/system/files/2018-07/2018-aha-chartbook.pdf (accessed August 27, 2020).

AHA (2018b). Trendwatch chartbook 2018. Chapter 4: Trends in hospital financing. American Hospital Association. Available at: https://www.aha.org/guidesreports/2018-05-23-trendwatch-chartbook-2018-chapter-4-trends-hospital-financing (accessed 20 October 2020).

AHA (2019). Increasing access to behavioral health care advances value for patients, providers and communities. TrendWatch. Available at: https://www.aha.org/system/files/media/file/2019/05/aha-trendwatch-behavioral-health-2019.pdf (accessed 20 October 2020).

AHF (nd). How is hospice care paid for? American Hospice Foundation. Available at: https://americanhospice.org/learning-about-hospice/how-is-hospice-care-paid-for/ (accessed 20 October 2020).

Ahluwalia SC, Chen C, Raaen L, Motala A, Walling AM, Chamberlin M et al. (2018). A systematic review in support of the National Consensus Project clinical practice guidelines for quality palliative care. 4th edn. *Journal of Pain and Symptom Management*, 56(6):831–70.

AHRQ (2011). Principles for the National Quality Strategy. Rockville, MD: Agency for Healthcare Research and Quality. Available at: https://www.ahrq.gov/workingforquality/index.html (accessed 1 July 2020).

AHRQ (2018). 2017 National healthcare quality and disparities report. Rockville, MD: Agency for Healthcare Research and Quality, September. Available at: https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/2017nhqdr.pdf (accessed 20 October 2020).

AHRQ (2020). Medical expenditure panel survey. Rockville, MD: Agency for Healthcare Research and Quality. Available at: https://meps.ahrq.gov/mepsweb/data_stats/MEPS_topics.jsp (accessed 20 October 2020).

Aiken L (2007). US nurse labor market dynamics are key to global nurse sufficiency. *Health Services Research*, 42(3 Pt 2):1299–1320.

Aizenman NC (2011). New study shows health insurance premium spikes in every state. *Washington Post* (National), 16 November 2011. Available at: https://www.washingtonpost.com/national/health-science/new-study-shows-health-insurance-premium-spikes-in-every-state/2011/11/16/gIQAhBl7SN_story.html (accessed 20 October 2020).

Akande M, Minneci PC, Deans KJ, Xiang H, Cooper JN (2018). Association of Medicaid expansion under the Affordable Care Act with outcomes and access to rehabilitation in young adult trauma patients. *JAMA Surgery*, 153(8):e181630.

Akee R, Jones MR, Porter SR (2019). Race matters: income shares, income inequality, and income mobility for all U.S. races. *Demography*, 56(3):999–1021.

Al-Amin M, Zinn J, Rosko MD, Aaronson W (2010). Specialty hospital market proliferation: strategic implications for general hospitals. *Health Care Management Review*, 35(4):294–300.

ALFA (2009). *Senior living options*. Assisted Living Federation of America. Available at: http://www.alfa.org/alfa/Assisted_Living_Information.asp (accessed 15 December 2012).

Allemani C 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-base registries in 71 countries. *Lancet*, 391(10125):1023–75.

Allen J (2011). Higher acuity in assisted living is here to stay. *Geriatric Nursing* (New York, NY), 32(1):69–71.

Altman S, Shactman D (2011). Power, politics, and universal health care: the inside story of a century-long battle. Amherst, NY: Prometheus Books.

AMA (2012). Overview of the RBRVS. American Medical Association. Available at: http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/medicare/the-resource-based-relative-value-scale/overview-of-rbrvs.page? (accessed 1 July 2020).

AMA (2018). Competition in health insurance research. American Hospital Association. Available at: https://www.ama-assn.org/delivering-care/patient-support-advocacy/competition-health-insurance-research (accessed 12 January 2019).

AMA (2019). Evaluating Medicaid value-based care models. American Medical Association. Available at: https://www.ama-assn.org/system/files/2019-04/medicaid-value-based-care-models.pdf (accessed 20 October 2020).

American Academy of Actuaries (2010). Issue brief: risk assessment and risk adjustment. Available at: http://www.actuary.org/pdf/health/Risk_Adjustment_Issue_Brief_Final_5-26-10.pdf (accessed 1 July 2020).

American Addiction Centers (2018). The laws and regulations about alcohol. Available at: https://www.alcohol.org/laws/ (accessed 6 January 2019).

American Geriatrics Society (2019). Updated AGS Beers Criteria® for potentially inappropriate medication use in older adults. *Journal of the American Geriatrics Society*, April 2019, 67(4):674–94.

American Lung Association (2020). Cigarette smoking comparisons and disparities. Available at: https://www.lung.org/research/trends-in-lung-disease/tobacco-trends-brief/cigarette-smoking-comparisons (accessed 20 October 2020).

Anderson AC, Chen J (2019). ACO affiliated hospitals increase implementation of care coordination strategies. *Medical Care*, 57(4):300–4.

Anderson G (2007). From 'soak the rich' to 'soak the poor': recent trends in hospital pricing. *Health Affairs*, 26(4):780–9.

Anderson K (2012). How far have we come in reducing health disparities: progress since 2000. Workshop Summary. Institute of Medicine of the National Academies. Washington, DC: National Academies Press.

Anderson KA, Dabelko-Schoeny HI, Fields NL, Carter JR (2015). Beyond respite: the role of adult day services in supporting dementia caregivers. *Home Health Care Services Quarterly*, 34(2):101–12.

Andrilla CHA, Patterson DG, Garberson LA, Coulthard C, Larson EH (2018). Geographic variation in the supply of selected behavioral health providers. *American Journal of Preventive Medicine*, 54(6S3):S199–S207.

APHA (2019). Community health workers. American Public Health Association. Available at: https://www.apha.org/apha-communities/member-sections/community-health-workers (accessed 20 October 2020).

Appleby J (2010). New rules spell out protections for consumers with 'limited benefit' insurance policies: Waffle House and McDonald's are among the employers who have been granted waivers exempting their plans from part of the health law for a year. Kaiser Health News, December. Available at: http://www.kaiserhealthnews.org/Stories/2010/December/09/mini-med-health-insurance-plans.aspx (accessed 1 July 2020).

Asch DA, Nicholson S, Vujicic M (2013). Are we in a medical education bubble market? *New England Journal of Medicine*, 369(21):1973–5.

Aslakson RA, Dy SM, Wilson RF, Waldfogel J, Zhang A, Isenberg SR et al. (2017). Patient- and Caregiver-Reported Assessment Tools for Palliative Care: Summary of the 2017 AHRQ Technical Brief. *Journal of Pain and Symptom Management*, 54(6):961–72.

Asplin B et al. (2005). Insurance status and access to urgent ambulatory care follow-up appointments. *JAMA*, 294(10):1248–54.

ASTHO (2012). State Public Health Agency classification: understanding the relationship between state and local public health. Association of State and Territorial Health Officials. Available at: http://www.astho.org/Research/State-and-Local-Public-Health-Relationships/ (accessed 20 October 2020).

ASTHO (2014). Budget cuts continue to affect the health of Americans. Association of State and Territorial Health Officials. Available at: https://www.astho.org/budget-cuts-Sept-2014/) (accessed 20 October 2020).

Auerbach DI, Buerhaus PI, Staiger DO (2017). How fast will the registered nurse workforce grow through 2030? Projections in nine regions of the country. *Nursing Outlook*, 65(1):116–22.

Ayalon L (2018). Loneliness and anxiety about aging in adult day care centers and continuing care retirement communities. *Innovation In Aging*, 2(2):igy021.

Baicker K, Dow WH (2009). Risk selection and risk adjustment: improving insurance in the individual and small group markets. *Inquiry*, 46:215–28.

Baicker K, Cutler D, Song Z (2010). Workplace wellness programs can generate savings. *Health Affairs*, 29(2):1–8.

Baker BE (2007). What reconstruction meant: historical memory in the American South. Charlottesville: University of Virginia Press.

Baker EA, Metzler MM, Galea S (2005). Addressing social determinants of health inequities: learning from doing. *American Journal of Public Health*, 95(4):553–5.

Baker S (2011a). HealthWatch: supreme court surprise: court will also hear Medicaid challenge. *The Hill*, 14 November 2011. Available at: https://thehill.com/policy/healthcare/193483-supreme-court-surprises-both-sides-of-health-suit-by-hearing-medicaid-challenge (accessed 20 October 2020).

Baker S (2011b). GAO: new rules leading to lower healthcare premiums, cuts to agents' fees. *The Hill*, 29 August 2011. Available at: http://thehill.com/blogs/healthwatch/health-reform-implementation/178633-gao-new-mlr-rules-leading-to-lower-premiums-cuts-in-agents-fees (accessed 1 July 2020).

Baker S (2011c). HHS grants 106 new healthcare waivers. *The Hill*, 19 August 2011. Available at: http://thehill.com/blogs/healthwatch/health-reform-implementation/177581-hhs-grants-106-new-healthcare-waivers (accessed 1 July 2020).

Bakhshayeh S, Sarbaz M, Kimiafar K, Vakilian F, Eslami S (2019). Barriers to participation in center-based cardiac rehabilitation programs and patients' attitude toward home-based cardiac rehabilitation programs. *Physiotherapy Theory and Practice*, 1–11.

Barnes H, Richards MR, McHugh MD, Martsolf G (2018). Rural and nonrural primary care physician practices increasingly rely on nurse practitioners. *Health Affairs (Project Hope)*, 37(6):908–14.

Basu S, Berkowitz SA, Phillips RL, Bitton A, Landon BE, Phillips RS (2019). Association of primary care physician supply with population mortality in the United States, 2005–2015. *JAMA Internal Medicine*, 179(4):506–14.

Bauchner H, Fontanarosa PB, Thompson AE (2015). Professionalism, governance, and self-regulation of medicine. *JAMA*, 313(18):1831. Available at: https://doi.org/10.1001/jama.2015.4569 (accessed 20 October 2020).

Bee P, Barnes P, Luker K (2009). A systematic review of informal caregivers' needs in providing home-based end-of-life care to people with cancer. *Journal of Clinical Nursing*, 18(10):1379–93.

Bellinger J et al. (2010). Specialty care use in US patients with chronic diseases. *International Journal of Environmental Research and Public Health*, 7(3):975–90.

Benjamins MR, Middleton M (2019). Perceived discrimination in medical settings and perceived quality of care: a population-based study in Chicago. *PLoS ONE*, 14(4):1–15.

Bennett KL, Phillips JP (2010). Finding, recruiting, and sustaining the future primary care physician workforce: a new theoretical model of specialty choice process. *Academic Medicine: Journal of the Association of American Medical Colleges*, 85(10 Suppl):S81–8.

Bercovitz A, Sengupta M, Jamison P (2010). Electronic medical record adoption and use in home health and hospice. *NCHS Data Brief*, (45):1–8.

Berenson RA, Burton RA, McGrath M (2016). Do accountable care organizations (ACOs) help or hinder primary care physicians' ability to deliver high-quality care? *Healthcare* (Amsterdam, Netherlands), 4(3):155–9.

Bernstein S (2011). Restaurants revamping menus in response to calorie count rules. *Los Angeles Times*, 22 June 2011.

BHPr (2010). The registered nurse population: findings from the 2008 National Sample Survey of Registered Nurses. Bureau of Health Professions, HRSA, US DHHS. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/rnsurveyfinal.pdf (accessed 1 July 2020).

Bielaszka-DuVernay C (2011). Vermont's blueprint for medical homes, community health teams, and better health at lower cost. *Health Affairs*, 30(3):383–6.

Biles B, Arnold G, Guterman S (2011). Medicare Advantage in the era of health reform: progress in leveling the playing field. Issue brief. The Commonwealth Fund.

Biles B et al. (2006). The cost of privatization: extra payments to Medicare Advantage plans (updated and revised). The Commonwealth Fund. Available at: https://pubmed.ncbi.nlm.nih.gov/17153271/ (accessed 1 July 2020).

Bisgaier J, Rhodes KV, Polsky D (2014). Factors associated with increased specialty care access in an urban area: the roles of local workforce capacity and practice location. *Journal of Health Politics, Policy and Law*, 39(6):1173–83.

Bishop TF, Press MJ, Keyhani S, Pincus HA (2014). Acceptance of insurance by psychiatrists and the implications for access to mental health care. *JAMA Psychiatry*, 71(2):176–81.

Bittner NP, Bechtel CF (2017). Identifying and describing nurse faculty workload issues: a looming faculty shortage. *Nursing Education Perspectives*, 38(4):171–6.

Bittoni MA, Wexler R, Spees CK, Clinton SK, Taylor CA (2015). Lack of private health insurance is associated with higher mortality from cancer and other chronic diseases, poor diet quality, and inflammatory biomarkers in the United States. *Preventive Medicine*, 81:420–6.

Blackstone E, Fuhr J (2007). Specialty hospitals: the economics and policy issues they pose. *Journal of Health Care Finance*, 34(2):1–9.

Blanda CM, Gould KA (2013). Financing options for large hospitals and multi-hospital systems. Available at: https://www.lancasterpollard.com/resources/educational-resources/white-papers-term-sheets/ (accessed 1 July 2020).

Blavin F, Garrett B, Blumberg L, Buettgen M, Gadsden S, Rifkin S (2014). Monitoring the impact of the Affordable Care Act on employers. Available at: https://www.urban.org/sites/default/files/publication/33696/413273-Monitoring-the-Impact-of-the-Affordable-Care-Act-on-Employers.PDF (accessed 20 October 2020).

Blendon RJ et al., (2006). Americans' view on health care costs (access, and quality. *Milbank Quarterly* 84(4):623–657.

BLS (2017). May 2017 occupational profiles. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/oes/2017/may/oes_stru.htm (accessed 20 October 2020).

BLS. (2018a). Occupational employment and wages, May 2017: 29-1062 family and general practitioners. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/oes/2017/may/oes291062.htm (accessed 20 October 2020).BLS (2018b). Standard occupational classification manual United States, 2018. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/soc/2018/soc_2018_manual.pdf (accessed 20 October 2020).

BLS (2018c). Occupational outlook handbook. Last modified 13 April 2018. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/ooh/ (accessed 20 October 2020).

BLS (2018d). Employee benefits in the United States, March 2018. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/news.release/archives/ebs2_09242020.pdf (accessed 20 October 2020).

BLS (2019). Dentists. Occupational outlook handbook. Department of Labor, Bureau of Labor Statistics. Available at: https://www.bls.gov/ooh/healthcare/dentists.htm (accessed 13 August 2019).

Blumberg LJ (2009). The high cost of small business health insurance: limited options, limited coverage. Washington DC. Available at: https://www.urban.org/sites/default/files/publication/30991/901290-the-high-cost-of-small-business-health-insurance-limited-options-limited-coverage.pdf (accessed 20 October 2020).

Blumenthal D, Glaser J (2007). Information technology comes to medicine. *New England Journal of Medicine*, 356(24):2527–34.

Blumenthal D, Morone JA (2009). The heart of power: health and politics in the Oval Office. Berkeley, CA: University of California Press.

Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medicare Insurance Trust Funds (2011). 2011 annual report. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/downloads/tr2011.pdf (accessed 1 July 2020).

Boards of Trustees, Federal Hospital Insurance and Federal Supplementary Medicare Insurance Trust Funds (2017). 2017 annual report. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/ReportsTrustFunds/Downloads/TR2017.pdf) (accessed 8 January 2019).

Boccia R, Jacobs I, Popovian R, de Lima Lopes G (2017). Can biosimilars help achieve the goals of US health care reform? *Cancer Management and Research*, 9:197–205. Available at: https://doi.org/10.2147/CMAR.S133442 (accessed 20 October 2020).

Bodenheimer B, Pham HH (2010). Primary care: current problems and proposed solutions. *Health Affairs*, 29(5):799–805.

Bodenheimer T (2008). Coordinating care: a perilous journey through the health care system. *New England Journal of Medicine*, 358:1064–71.

Boehlen FH, Freigofas J, Herzog W, Meid AD, Saum K, Schoettker B et al. (2019). Evidence for underuse and overuse of antidepressants in older adults: results of a large population-based study. *International Journal of Geriatric Psychiatry*, 34(4):539–47.

Bookman K, West D, Ginde A, Wiler J, McIntyre R, Hammes A et al. (2017). Embedded clinical decision support in Electronic Health Record decreases use of high-cost imaging in the Emergency Department: Emb ED study. *Academic Emergency Medicine*, 24(7):839–45.

Borkowski S (2012). Solutions for ED overcrowding: increasing urgent care centers. *Journal of Emergency Nursing*, 38(2):116–17.

Brantley E, Ku L (2018). Work requirements: SNAP data show Medicaid losses could be much faster and deeper than projected. *Health Affairs Blog*. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180412.310199/full/ (accessed 30 May 2019).

Bravin J (2011). Supreme test for health law. *Wall Street Journal*, 15 November 2011.

Brennan DS, Teusner DN (2015). Oral health impacts on self-rated general and oral health in a cross-sectional study of working age adults. *Community Dentistry and Oral Epidemiology*, 43(3):282–8.

Brice YN, Joynt KE, Tompkins CP, Ritter GA (2018). Meaningful use and hospital performance on post-acute utilization indicators. *Health Services Research*, 53(2):803–23.

Bringewatt EH, Gershoff ET (2010). Falling through the cracks: gaps and barriers in the mental health system for America's disadvantaged children. *Children and Youth Services Review*, 32:1291–9.

Bristow RE, Powell MA, Al-Hammadi N, Chen L, Miller JP, Roland PY et al. (2013). Disparities in ovarian cancer care quality and survival according to race and socioeconomic status. *Journal of the National Cancer Institute*, 105(11):823–32. Available at: https://pubmed.ncbi.nlm.nih.gov/23539755/ (accessed 20 October 2020).

Brodie M et al. (2011). Kaiser tracking poll: public opinion and health care issues (February). Available at: https://www.kff.org/health-reform/poll-finding/kaiser-health-tracking-poll-february-2011/ (accessed 1 July 2020).

Brown LD (2011). The elements of surprise: how health reform happened. *Journal of Health Politics, Policy and Law*, 36(3):419–27.

Brownlee S, Chalkidou K, Doust J, Elshaug AG, Glasziou P, Heath I et al. (2017). Evidence for overuse of medical services around the world. *Lancet*, 390:156–68.

Bryant LL et al. (2004). Measuring healthcare outcomes to improve quality of care across post-acute care provider settings. *Journal of Nursing Care Quality*, 19(4):368–76.

Burke LG, Frakt AB, Khullar D, Orav EJ, Jha AK (2017). Association between teaching status and mortality in US hospitals. *JAMA*, 317(20):2105–13.

Burtless G, Svaton P (2010). Health care, health insurance, and the distribution of American incomes. *Forum for Health Economics and Policy*, 13(1):1–39.

Butler PA (2000). ERISA preemption manual for state health policy makers. State Coverage Initiatives. Available at: www.statecoverage.org/node/2089 (accessed 1 July 2020).

Byrne CM et al. (2010). The value from investments in health information technology at the US Department of Veterans Affairs. *Health Affairs*, 29(4):629–38.

Caffrey C, Lendon JP (2019). Service provision, hospitalizations, and chronic conditions in adult day services centers: findings from the 2016 national study of long-term care providers. *National Health Statistics Reports*, 124:1–9.

California Department of Insurance (2010). 2010 Guide on Medicare Supplement insurance. Sacramento: California Department of Insurance.

California Health Care Foundation (2020). Infographic – US health care spending: who pays? Available at: https://www.chcf.org/publication/us-health-care-spending-who-pays/) (accessed 20 October 2020).

Camilleri S (2018). The ACA Medicaid expansion, disproportionate share hospitals, and uncompensated care. *Health Services Research*, 53(3):1562–80.

Candon M, Zuckerman S, Wissoker D, Saloner B, Kenney GM, Rhodes K et al. (2018). Declining Medicaid fees and primary care appointment availability for new Medicaid patients. *JAMA Internal Medicine*, 178(1):145–6.

Carey MA (2010). Health law's 8 new changes to insurance – with 7 caveats. *Kaiser Health News*, 24 September 2009.

Carpino R, Walker MP, Liu Y, Simmer-Beck M (2017). Assessing the effectiveness of a school-based dental clinic on the oral health of children who lack access to dental care. *Journal of School Nursing*, 33(3):181–8.

Carr T (2017). Too many meds: American's love affair with prescription medication. Consumer Reports, 3 August 2017.

Carroll AE, Frakt A (2019). It saves lives. It can save money. So why aren't we spending more on public health? Available at: https://www.nytimes.com/2018/05/28/upshot/it-saves-lives-it-can-save-money-so-why-arent-we-spending-more-on-public-health.html (accessed 4 April 2019).

Carroll NW, Smith DG, Wheeler JR (2015). Capital investment by independent and system-affiliated hospitals. *Inquiry*, 52:1–9.

Casalino LP, Ramsay P, Baker LC, Pesko MF, Shortell SM (2018). Medical group characteristics and the cost and quality of care for Medicare beneficiaries. *Health Services Research*, epub, 5 July. Available at: https://onlinelibrary.wiley.com/doi/full/10.1111/1475-6773.13010 (accessed 20 October 2020).

Cash PA, Daines D, Doyle RM, von Tettenborn L (2009). Quality workplace environments for nurse educators: implications for recruitment and retention. *Nursing Economic$*, 27(5):315–21.

CBO (2007). Statement of Peter R. Orszag before the committee on the budget, US House of Representatives, 28 June 2007. Congressional Budget Office. Available at: https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/82xx/doc8265/06-28-medicareadvantage.pdf (accessed 1 June 2020).

CBO (2010a). Letter to Speaker of the House, Honorable Nancy Pelosi, 20 January 2010. Congressional Budget Office. Available at: https://www.cbo.gov/sites/default/files/hr4872_0.pdf (accessed 1 July 2020).

CBO (2010b). H.R. 4872, Reconciliation Act of 2010 (Final Health Care Legislation), 20 March 2010. Congressional Budget Office. Available at: https://www.cbo.gov/publication/21351 (accessed 1 July 2020).

CBO (2012a). Estimates for the insurance coverage provisions of the Affordable Care Act updated for the recent Supreme Court Decision, 24 July 2012. Congressional Budget Office Available at: https://www.cbo.gov/publication/43472 (accessed 1 July 2020).

CBO (2012b). The health care system for veterans: an interim report. Congressional Budget Office. Available at: http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/88xx/doc8892/maintext.3.1.shtml (accessed 1 July 2020).

CBO (2013). The distribution of major tax expenditures in the individual income tax system. Congressional Budget Office. Available at: https://www.cbo.gov/sites/default/files/cbofiles/attachments/43768_DistributionTaxExpenditures.pdf (accessed 14 January 2019).

CDC (2010). CDC awards $13 million for preparedness and response learning centers; funding to maintain and develop public health responders as part of national security. Centers for Disease Control and Prevention. Press release, 14 September 2010. Available at: https://www.cdc.gov/media/pressrel/2010/r100914.htm (accessed 1 July 2020).

CDC (2011). Health, United States, 2010. Tables 108, 113. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/nchs/data/hus/hus10.pdf (accessed 1 July 2020).

CDC (2012). Health, United States, 2011. Table 116. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/nchs/data/hus/hus11.pdf (accessed 1 July 2020).

CDC (2016). Health, United States, 2016. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/nchs/data/hus/hus16.pdf (accessed 19 September 2018).

CDC (2017a). Health, United States, 2017. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/nchs/hus/index.htm (accessed 15 February 2019).

CDC (2017b). Infant mortality rates by state. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/nchs/pressroom/sosmap/infant_mortality_rates/infant_mortality.htm (accessed 15 February 2019).

CDC (2017c). Health, United States, 2017. Table 097. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/nchs/hus/contents2017.htm#Table (accessed 7 March 2019).

CDC (2017d). National diabetes statistics report, 2017. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf (accessed 13 February 2019).

CDC (2019a). About CDC: CDC 24–7. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm (accessed 20 October 2020).

CDC (2019b). Data and statistics on autism spectrum disorder. Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/ncbddd/autism/data.html (accessed 29 March 2019).

Center for Health Care Strategies (2010). Sound practices in Medicaid payment for hospital care. Available at: http://www.chcs.org/media/Sound_Medicaid_Purchasing_FINAL.pdf (accessed 1 July 2020).

Center for Studying Health Systems Change (2010). Wide variation in hospital and physician payment rates evidence of provider market power. Available at: http://hschange.org/CONTENT/1162/#ib5 (accessed 1 July 2020).

Chaudhry SB, Siegfried E, Armbrecht E, Shin Y (2013). Pediatric access to dermatologists: Medicaid versus private insurance. *Journal of the American Academy of Dermatology*, 68(5):738–48.

Chen A (2017) From premed to physician: pursuing a medical career. Career Outlook, US Bureau of Labor Statistics, December 2017. Available at: https://www.bls.gov/careeroutlook/2017/article/mobile/premed.htm (accessed 20 October 2020).

Chen A, Oster E, Williams H (2016). Why Is infant mortality higher in the United States than in Europe? *American Economic Journal: Economic Policy*, 8(2):89–124.

Chen C et al. (2009). The Kaiser Permanente electronic health record: transforming and streamlining modalities of care. *Health Affairs*, 28(2):323–33.

Chen M, Wright CD, Tokede O, Yansane A, Montasem A, Kalenderian E et al. (2019). Predictors of dental care utilization in north-central Appalachia in the USA. *Community Dentistry and Oral Epidemiology*, 47(4):283–90.

Chen S, Weir M (2009). The long shadow of the past: risk pooling and the political development of health care reform in the States. *Journal of Health Politics, Policy and Law*, 34(5):679–716.

Cheng S, Chen C, Hou Y (2010). A longitudinal examination of continuity of care and avoidable hospitalization: evidence from a universal coverage health care system. *Archives of Internal Medicine*, 170(18):1671–7.

Chetty R, Stepner M, Abraham S, Shelby L, Scuderi B, Turner N et al. (2016). The association between income and life expectancy in the United States, 2001–2014. *JAMA*, 315(16):1750–66.

Choi MK (2011). The impact of Medicaid insurance coverage on dental service use. *Journal of Health Economics*, 30(5):1020–31.

Choi S (2017). Hospital capital investment during the great recession. *Inquiry*, 54:1–11.

Choma B, Barnes A, Brau R, Hanoch Y (2108). Dissecting the politics of 'Obamacare'. The role of distributive justice, deservingness, and affect. *Journal of Applied Social Psychology*, 48(11):634–42. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/jasp.12553?af=R (accessed 4 April 2019).

Choo J, Johnston L, Manias E (2014). Effectiveness of an electronic inpatient medication record in reducing medication errors in Singapore. *Nursing and Health Sciences*, 16(2):245–54.

Choudhry NK et al. (2009). Drug company-sponsored patient assistance programs: a viable safety net? *Health Affairs*, 28(3):827–34.

Choudhry NK et al. (2011). Full coverage for preventive medications after myocardial infarction. *New England Journal of Medicine*, 365:2088–97.

Christensen EW, Dorrance KA, Ramchandani S, Lynch S, Whitmore CC, Borsky AE et al. (2013). Impact of a patient-centered medical home on access, quality, and cost. *Military Medicine*, 178(2):135–41.

Chukmaitov A et al. (2008). A comparative study of quality outcomes in freestanding ambulatory surgery centers and hospital-based outpatient departments: 1997–2004. *Health Services Research*, 43(5 Pt 1):1485–1504.

Ciccarone D (2019). The triple wave epidemic: supply and demand drivers of the US opioid overdose crisis. *International Journal of Drug Policy*, Epub ahead of print, February 2019. Available at: https://pubmed.ncbi.nlm.nih.gov/30718120/ (accessed 20 October 2020).

Clark D, Breslauer B (2018). Trump signs bills lifting pharmacist 'gag clauses' on drug prices. NBC News. Available at: https://www.nbcnews.com/politics/white-house/trump-signs-bills-lifting-pharmacist-gag-orders-drug-prices-n918721 (accessed 4 April 2019).

Classen DC et al. (2011). 'Global trigger tool' shows that adverse events in hospitals may be ten times greater than previously measured. *Health Affairs*, 30(4):581–9.

Claxton G et al. (2010). Health benefits in 2010: premiums rise modestly, workers pay more toward coverage. *Health Affairs*, 29(10):1942–50.

Claxton G et al. (2017). Health benefits in 2017: stable coverage, workers faced considerable variation in costs. *Health Affairs*, 36(10):1838–47. Available at: https://doi.org/10.1377/hlthaff.2017.0919 (accessed 20 October 2020).

Claxton G, Rae M, Damico A, Young G, McDermott D, Whitmore H (2019). Health benefits in 2019: premiums inch higher, employers respond to federal policy. *Health Affairs*, 38(10):1752–61. Available at: https://doi.org/10.1377/hlthaff.2019.01026 (accessed 20 October 2020).

Clement S (2018). Public support for gun restrictions has grown to the highest level in 25 years. Washington Post. Available at: https://www.washingtonpost.com/news/the-fix/wp/2018/03/14/public-support-for-gun-restrictions-has-grown-to-the-highest-level-in-25-years/?utm_term=.9bcd53ee3299 (accessed 6 January 2019).

Cluett J (2019). Outpatient total hip replacement surgery. Verywell website. Available at: https://www.verywellhealth.com/outpatient-total-hip-replacement-surgery-2549651 (accessed 20 October 2020).

CMS (nd, a). Administrative simplification provisions in the Patient Protection and Affordable Care Act of 2010 (ACA). Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA (accessed 1 July 2020).

CMS (nd, b). Deadlines and key dates: HIPAA administrative simplification compliance. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA/Downloads/Timeline-of-Key-Statutes-and-Regulations-20181116.pdf (accessed 1 July 2020).

CMS (nd, c). Medicare FFS physician feedback program/value-based payment modifier. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram (accessed 1 July 2020).

CMS (2010). Shining a light on health insurance rate increases. Available at: https://www.cms.gov/CCIIO/Resources/Fact-Sheets-and-FAQs/ratereview (accessed 20 October 2020).

CMS (2011a). Medicare supplier/provider enrollment. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/MedicareProviderSupEnroll (accessed 1 July 2020).

CMS (2011b). Physician self referral. Centers for Medicare & Medicaid Services. Available at: http://www.cms.gov/PhysicianSelfReferral/ (accessed 1 July 2020).

CMS (2011c). EMTALA. Centers for Medicare & Medicaid Services. Available at: http://www.cms.gov/EMTALA/ (accessed 1 July 2020).

CMS (2011d). CfCs and CoPs. Centers for Medicare & Medicaid Services. Available at: http://www.cms.gov/CFCsAndCoPs/ (accessed 1 July 2020).

CMS (2011e). Medicaid drug rebate program. Centers for Medicare & Medicaid Services. Available at: https://www.medicaid.gov/medicaid/prescription-drugs/medicaid-drug-rebate-program/index.html (accessed 1 July 2020).

CMS (2012a). Health expenditures by age and gender. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Age-and-Gender.html (accessed 20 August 2018).

CMS (2012b). What's an ACO? Centers for Medicare and Medicaid Services. Available at: https://www.cms.gov/ACO/ (accessed 1 June 2020).

CMS (2015). Intermediate care facilities for individuals with intellectual disabilities (ICF/IID). Centers for Medicare and Medicaid Services. Available at: https://www.cms.gov/Regulations-and-Guidance/Legislation/CFCsAndCoPs/Intermediate-Care-Facilities-for-Individuals-with-Intellectual-Disabilities-ICF-IID.html (accessed 20 October 2020).

CMS (2016a). Medicaid Managed Care enrollment and program characteristics (2016). Centers for Medicare & Medicaid Services. Available at: https://www.medicaid.gov/medicaid/managed-care/downloads/enrollment/2016-medicaid-managed-care-enrollment-report.pdf (accessed 8 January 2019).

CMS (2016b). Teaching hospital list. Centers for Medicare and Medicaid Services. Available at: https://www.cms.gov/OpenPayments/Downloads/2016-Reporting-Cycle-Teaching-Hospital-List-[September-2015].pdf (accessed 20 October 2020).

CMS (2017). Medicaid drug rebate program. Centers for Medicare & Medicaid Services. Available at: https://www.medicaid.gov/medicaid/prescription-drugs/medicaid-drug-rebate-program/index.html (accessed 1 May 2018).

CMS (2018a). HIPAA and ACA: Statutes and Regulations. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Regulations-and-Guidance/Administrative-Simplification/HIPAA-ACA/StatutesandRegulations.html (accessed 6 January 2019).

CMS (2018b). CMS fast facts. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/cms-fast-facts/index.html (accessed 8 January 2019).

CMS (2018c). MACRA. Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/medicare/quality-initiatives-patient-assessment-instruments/value-based-programs/macra-mips-and-apms/macra-mips-and-apms.html (accessed 24 January 2019).

CMS (2019a). Accountable care organizations (ACOs). Centers for Medicare & Medicaid Services. Available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/ (accessed 3 April 2019).

CMS (2019b). Quality ratings of health plans on HealthCare.gov. Centers for Medicare & Medicaid Services. Available at: https://www.healthcare.gov/quality-ratings/ (accessed 3 April 2019).

CMS (2019c). Does Medicaid cover the costs of prescription drugs? Centers for Medicare and Medicaid Services, website, updated 15 January 2019. Available at: https://eligibility.com/medicaid/does-medicaid-cover-the-costs-of-prescription-drugs (accessed 20 October 2020).

CMS (2019d). IMPACT Act of 2014 Data Standardization & Cross Setting Measures. Centers for Medicare and Medicaid Services. Available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/IMPACT-Act-of-2014/IMPACT-Act-of-2014-Data-Standardization-and-Cross-Setting-Measures.html (accessed 20 October 2020).

CMS (2019e). Inpatient rehabilitation facilities (IRF) quality reporting program (QRP). Centers for Medicare and Medicaid Services. Available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/IRF-Quality-Reporting (accessed 20 October 2020).

CMS (2019f). Home health quality measures. Centers for Medicare and Medicaid website. Available at: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HomeHealthQualityInits/Home-Health-Quality-Measures.html (accessed 30 May 2019).

CMS (2020). National Expenditure Data Fact sheet. Available at https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet (accessed 1 July 2020).

Cogburn CD (2019). Culture, race, and health: implications for racial inequities and population health. *Milbank Quarterly*, 97(3):736–61.

Cohen L (2017). The fiscal cliff is making us sick. Primary Care Development Corporation. Available at: https://www.pcdc.org/fiscal-cliff-making-us-sick-ceo-louise-cohen-hill/ (accessed 4 April 2019).

Cohen RA, Martinez ME (2007). Health insurance coverage: early release of estimates from the National Health Interview Survey, January–September 2006. National Center for Health Statistics, Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/nchs/nhis.htm (accessed 1 April 2020).

Cohen RA, Terlizzi EP, Martinez ME (2019). Health insurance coverage: early release of estimates from the National Health Interview Survey, 2018. National Center for Health Statistics, Centers for Disease Control and Prevention. Available at: https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201905.pdf (accessed 20 October 2020).

Cohen T (2014). Audit: more than 120,000 veterans waiting or never got care. CNN Politics. Available at: https://www.cnn.com/2014/06/09/politics/va-audit/ (accessed 29 March 2019).

Cole MB, Trivedi AN, Wright B, Carey K (2018). Health insurance coverage and access to care for community health center patients: evidence following the Affordable Care Act. *Journal of General Internal Medicine*, 33(9):1444–6.

Collins SR (2019). Medicaid work requirements increase coverage gaps. *Public Health Post*. Available at: https://www.publichealthpost.org/research/medicaid-work-requirements-to-increase-coverage-gaps-for-poor-americans/# (accessed 30 May 2019).

Collins SR, Bhupal HK, Doty MM (2019). Health insurance coverage eight years after the ACA: fewer uninsured Americans and shorter coverage gaps, but more underinsured. The Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2019/feb/health-insurance-coverage-eight-years-after-aca (accessed 20 October 2020).

Collins SR, Gunja MZ, Doty MM (2017). How well does insurance coverage protect consumers from health care costs? The Commonwealth Fund. Available at: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_issue_brief_2017_oct_collins_underinsured_biennial_ib.pdf (accessed 29 March 2019).

Comer JS, Olfson M, Mojtabai R (2010). National trends in child and adolescent psychotropic polypharmacy in office-based practice, 1996–2007. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(10):1001–10.

Commission on Social Determinants of Health (2008). Closing the gap in a generation; health equity through action on the social determinants of health. World Health Organization, p. 11. Available at: https://www.thelancet.com/action/showPdf?pii=S0140-6736%2808%2961690-6) (accessed 20 October 2020).

Commonwealth Fund (2007). State scorecard data tables: supplement to aiming higher: results from state scorecard on health system performance. Available at: https://www.commonwealthfund.org/publications/fund-reports/2007/jun/aiming-higher-results-state-scorecard-health-system-performance (accessed 20 October 2020).

Commonwealth Fund (2010a). What will happen under health reform – and what's next? *Columbia Journalism Review*, May/June 2010, supplement.

Commonwealth Fund (2010b). Timeline for health care reform implementation; system and delivery reform provisions. Available at: http://www.healthedpartners.org/ceu/hr2/commonwealthhealthreformsummary.pdf (accessed 1 June 2020).

Commonwealth Fund (2014). Mortality amenable to health care by race, state variation, 2009–10. Available at: https://www.commonwealthfund.org/chart/2014/mortality-amenable-health-care-race-state-variation-2009-10 (accessed 7 March 2019).

Commonwealth Fund (2016). Biennial health insurance survey, 2003–2016. Available at: https://www.commonwealthfund.org/publications/surveys/2017/feb/biennial-health-insurance-survey-2003-2016 (accessed 12 January 2019).

Commonwealth Fund (2017). Underinsured rate increased sharply in 2016; more than two of five marketplace enrollees and a quarter of people with employer health insurance plans are now underinsured. Available at: https://www.commonwealthfund.org/press-release/2017/underinsured-rate-increased-sharply-2016-more-two-five-marketplace-enrollees-and (accessed 3 April 2019).

Commonwealth Fund (2018). 2018 scorecard on state health system performance. Available at: https://interactives.commonwealthfund.org/2018/state-scorecard/ (accessed 29 March 2019).

Commonwealth Fund (2019). Health insurance coverage eight years after the ACA. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2019/feb/health-insurance-coverage-eight-years-after-aca (accessed 22 February 2019).

Conbeer G (2007). Making the right long-term prescription for medical equipment financing. *hfm (Healthcare Financial Management)*, 61(6):88–93.

Conlan TJ, Posner PL (2011). Inflection point? Federalism and the Obama Administration. *Publius: the Journal of Federalism*, 41(3):421–46.

Connors E, Gostin L (2010). Health care reform – a historic moment in US social policy. *JAMA*, 303(24):2521–2.

Cook FL (2011). The need for public deliberation: giving the public a voice on affordable health insurance. *Journal of Health Politics, Policy and Law*, 36(5):879–85.

Corlette S, Schwab R (2018). States lean in as the federal government cuts back on navigator and advertising funding for the ACA's sixth open enrollment. The Commonwealth Fund, 26 October. Available at: https://www.commonwealthfund.org/blog/2018/states-lean-federal-government-cuts-back-navigator-and-advertising-funding (accessed 27 June 2020).

Cornell Law School (2020). 45 CFR 156.280 – Separate billing and segregation of funds for abortion services. Available at: https://www.law.cornell.edu/cfr/text/45/156.280 (accessed 27 June 2020).

Corwin GS, Parker DM, Brown JR (2016). Site of treatment for non-urgent conditions by Medicare beneficiaries: is there a role for urgent care centres? *The American Journal of Medicine*, 129(9):966.

Council for Affordable Health Insurance (2009). Health savings accounts and preventive care. Available at: http://www.cahi.org/cahi_contents/resources/pdf/n153HSAPreventiveCare.pdf (accessed 1 July 2020).

Cowley S (2017). IRS starts to enforce health law's rule that employers offer insurance. Available at: https://www.nytimes.com/2017/11/16/business/irs-health-insurance-mandate.html?login=email&auth=login-email (accessed 3 April 2019).

Creedon TB, Lê Cook B (2016). Access to mental health care increased but not for substance use, while disparities remain. *Health Affairs*, 35(6):1017–21.

Crimmins EM, Preston SH, Cohen B, eds (2011). Explaining divergent levels of longevity in high-income countries. Washington, DC: National Academies Press. Available at: http://www.nap.edu/catalog.php?record_id=13089 (accessed 1 July 2020).

Crisp N, Chen L (2014). Global supply of health professionals. *New England Journal of Medicine*, 370:950–7.

Cronenwet L et al. (2011). The doctor of nursing practice: a national workforce perspective. *Nursing Outlook*, 59:9–17.

CRS Report for Congress (2009). Summary of the Employee Retirement Income Security Act (ERISA). Available at: https://www.everycrsreport.com/reports/RL34443.html (accessed 1 July 2020).

Cuckler G et al. (2018). National health expenditure projections, 2017–26: despite uncertainty, fundamentals primarily drive spending growth. *Health Affairs*. Available at: https://doi.org/10.1377/hlthaff.2017.1655 (accessed 20 October 2020).

Cullen KA, Hall MJ, Golosinskiy A (2009). Ambulatory surgery in the United States, 2006. National Health Statistics Report no. 11, January 2009, for the Centers for Disease Control and Prevention. US Department of Health and Human Services (revised 4 September 2009).

Cummings JR, Allen L, Clennon J, Xu Ji, Druss BG, Ji X (2017). Geographic access to specialty mental health care across high- and low-income US communities. *JAMA Psychiatry*, 74(5):476–84.

Cunningham PJ, O'Malley AS (2008). Do reimbursement delays discourage Medicaid participation by physicians? *Health Affairs*, 28(1):W17–28.

Cunningham R (2000). Letter to the editor. *Health Affairs*, 19(3):285.

Cutler DM (2007). The lifetime costs and benefits of medical technology. *Journal of Health Economics*, 26(6):1081–1100.

Cutler DM, Ly DP (2011). The (paper)work of medicine: understanding international medical costs. *Journal of Economic Perspectives*, 25(2):3–25.

Cutler DM, Davis K, Stremikis K (2009). Why health reform will bend the cost curve. Issue brief, vol. 72, pub. 1351, December 2009. Center for American Progress and the Commonwealth Fund.

Cykert DM, Williams JS, Walker RJ, Davis KS, Egede LE (2017). The association of cumulative discrimination on quality of care, patient-centered care, and dissatisfaction with care in adults with type 2 diabetes. *Journal of Diabetes and its Complications*, 31(1):175–9.

Daker-White G, Hays R, McSharry J, Giles S, Cheraghi-Sohi S, Rhodes P et al. (2015). Blame the patient, blame the doctor or blame the system? A meta-synthesis of qualitative studies of patient safety in primary care. *Plos ONE*, 10(8):1–42.

Davis B, Chinni D (2018). America's factory towns, once solidly blue, are not a GOP haven. *Wall Street Journal*, 20 July 2018.

Davis K, Schoen C, Stremikis K (2010). Mirror, mirror on the wall: the performance of the US health care system compares internationally. New York: Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/fund-reports/2010/jun/mirror-mirror-wall-how-performance-us-health-care-system (accessed 1 July 2020).

Daw C, Truong D, Rosenau P (2011). Health policy in the United States: consumers and citizens in a market polity. In H Lofgren, E de Leeuw & M Leahy (eds.), Democratizing health: consumer groups in the policy process. Cheltenham: Edward Elgar.

Decker SL (2011). Medicaid payment levels to dentists and access to dental care among children and adolescents. *JAMA*, 306(2):187–93.

Decker SL (2012). In 2011 nearly one-third of physicians said they would not accept new medicaid patients, but rising fees may help. *Health Affairs*, 31(8):1673–9. Available at: https://doi.org/10.1377/hlthaff.2012.0294 (accessed 20 October 2020).

Decker SL, Lipton BJ (2015). Do Medicaid benefit expansions have teeth? The effect of Medicaid adult dental coverage on the use of dental services and oral health. *Journal of Health Economics*, 44:212–25.

DeNavas-Walt C, Procto BD (2015). Income and poverty in the United States: 2014. Current population reports, US Census Bureau. Available at: https://www.census.gov/content/dam/Census/library/publications/2015/demo/p60-252.pdf (accessed 20 October 2020).

Department of Health Care Finance (2016). District of Columbia state health innovation plan. Available at: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/DC SHIP Interim Draft.pdf (accessed 7 January 2019).

DeSario J (1982). Demise of health planning in the United States: the politics of incremental health policy information. *Journal of Public Health Policy*, 3(2):164–77.

Deshpande SP, DeMello J (2011). A comparative analysis of factors that hinder primary care physicians' and specialist physicians' ability to provide high-quality care. *Health Care Manager*, 30(2):172–8.

DesRoches CM et al. (2010). Electronic health records' limited successes suggest more targeted uses. *Health Affairs*, 29(4):639–46.

Deville C, Hwang W-T, Burgos R, Chapman CH, Both S, Thomas CR Jr (2015). Diversity in graduate medical education in the United States by race, ethnicity, and sex, 2012. *JAMA Internal Medicine*, 175(10):1706–8.

Devine EB, Totten AM, Gorman P, Eden KB, Kassakian S, Woods S et al. (2016). Health information exchange use (1990–2015): a systematic review. eGEMs, 5(1):1–22.

DeVoe JE, Marino M, Gold R, Hoopes MJ, Cowburn S, O'Malley JP et al. (2015). Community Health Center Use After Oregon's Randomized Medicaid Experiment. *Annals of Family Medicine*, 13(4):312–20.

Dey JG, Johnson M, Pajerowski W, Tanamor M, Ward A (2019). Home health study report. HHSM-500-2010-00072C, L&M Policy Research, LLC. Available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HomeHealthPPS/downloads/HHPPS_LiteratureReview.pdf (accessed 20 October 2020).

Dickson V (2018). Hospitals considering leaving new CMS bundled-payment model. Modern Healthcare. Available at: https://www.modernhealthcare.com/article/20181006/NEWS/181009928/hospitals-considering-leaving-new-cms-bundled-payment-model (accessed 3 April 2019).

Diller P (2007). Intrastate preemption. *Boston University Law Review*, 87:1113–76.

Dillman J, Mancas B, Jacoby M, Ruth-Sahd L (2014). A review of the literature: differences in outcomes for uninsured versus insured critically ill patients. *Dimensions of Critical Care Nursing*, 33(1):8–14.

Dixon A, Greene J, Hibbard J (2008). Do consumer-driven health plans drive enrollees' health care behavior? *Health Affairs*, 27:1120–31.

Dobkin C, Finkelstein A, Kluender R, Notowidigdo MJ (2018). Myth and measurement – the case of medical bankruptcies. *New England Journal of Medicine*, 378:1076–8.

Docteur E, Berenson RA (2009). How does the quality of U.S. health care compare internationally? Washington, DC: Urban Institute. Available at: http://www.urban.org/uploadedpdf/411947_ushealthcare_quality.pdf (accessed 1 July 2020).

Dotson MJ, Dave DS, Cazier JA, Spaulding TJ (2014). An empirical analysis of nurse retention: what keeps RNs in nursing? *Journal of Nursing Administration*, 44(2):111–16.

Douthit N, Kiv S, Dwolatzky T, Biswas S (2015). Exposing some important barriers to health care access in the rural USA. *Public Health (Elsevier)*, 129(6):611–20.

Dowding D, Turley M, Garrido T (2012). The impact of an electronic health record on nurse sensitive patient outcomes: an interrupted time series analysis. *Journal of the American Medical Informatics Association*, 19(4):615–20.

Druss B et al. (2008). Trends in mental health and substance abuse services at the nation's community health centers: 1998–2003. *American Journal of Public Health*, 96(10):1779–84.

Dudding KM, Gephart SM, Carrington JM (2018). Neonatal nurses experience unintended consequences and risks to patient safety with electronic health records. *Computers, Informatics, Nursing: CIN*, 36(4):167–76.

Eckhardt H, Smith P, Quentin W (2019). Pay for quality: using financial incentives to improve quality of care. In R Busse, N Klazinga, D Panteli & W Quentin (eds.), Improving healthcare quality in Europe: characteristics, effectiveness and implementation of different strategies. European Observatory on Health Systems and Policies. Available at: https://apps.who.int/iris/bitstream/handle/10665/327356/9789289051750-eng.pdf?sequence=1&isAllowed=y (accessed 20 October 2020).

ECRI. (2014). Top 10 patient safety concerns for healthcare organizations 2014. ECRI Institute website: https://www.ecri.org/ (accessed 20 October 2020).

ECRI. (2015). Top 10 patient safety concerns for healthcare organizations 2015. ECRI Institute website: https://www.ecri.org/(accessed 20 October 2020).

ECRI. (2016). Top 10 patient safety concerns for healthcare organizations 2016. ECRI Institute website: https://www.ecri.org/(accessed 20 October 2020).

ECRI. (2017). Top 10 patient safety concerns for healthcare organizations 2017. ECRI Institute website: https://www.ecri.org/(accessed 20 October 2020).

ECRI. (2018). Top 10 patient safety concerns for healthcare organizations 2018. ECRI Institute website: https://www.ecri.org/(accessed 20 October 2020).

Edwards ST, Bitton A, Hong J, Landon BE (2014). Patient-centered medical home initiatives expanded in 2009–13: providers, patients, and payment incentives increased. *Health Affairs*, 33(10):1823–31.

Eilperin J (2017). Why Trump's order to cut government regulation is even bolder than it seems. Washington Post. Available at: https://www.washingtonpost.com/news/powerpost/wp/2017/02/13/why-trumps-order-to-cut-government-regulation-is-even-bolder-than-it-seems/?utm_term=.e578c54495d0 (accessed 3 April 2019).

Ellis R (2001). Formal risk adjustment by private employers. *Inquiry*, 38(3):299–309.

Employee Benefit Research Institute (2009). Health plan differences: fully-insured vs. self-insured. Available at: https://www.ebri.org/crawler/view/health-plan-differences-fully-insured-vs.-self-insured (accessed 1 July 2020).

Encinosa WE, Bae J (2011). Health information technology and its effects on hospital costs, outcomes, and patient safety. *Inquiry*, 48(4):288–303.

Enthoven A, Kronick R (1989). A consumer-choice health plan for the 1990s. *New England Journal of Medicine*, 320(1):29–37.

Enthoven E, (1980). Health plan: the only practice solution to the soaring cost of medical care. Reading, MA: Addison-Wesley.
Eurostat (2018). Amenable and preventable death statistics. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php/Amenable_and_preventable_deaths_statistics (accessed 29 March 2019).
Evans A, Anthony C (2018). Gun violence: a public health problem. *The Hill*, 4 June 2018. Available at: https://thehill.com/blogs/congress-blog/healthcare/381874-gun-violence-a-public-health-problem (accessed 6 January 2019).
Evans CS, Smith S, Kobayashi L, Chang DC (2015). The effect of community health center (chc) density on preventable hospital admissions in Medicaid and uinsured patients. *Journal of Health Care for the Poor and Underserved*, 26(3):839–51.
Everett CM, Morgan P, Jackson GL (2016). Primary care physician assistant and advance practice nurses roles: patient healthcare utilization, unmet need, and satisfaction. *Healthcare (Amsterdam, Netherlands)*, 4(4):327–33.
Evich BE (2018). Obama's calorie rule kicks in thanks to Trump. *Politico*, 5 July 2018. Available at: https://www.politico.com/story/2018/05/07/fdacalories-food-labels-obama-trump-517191 (accessed 4 April 2019).
Ezeonwu MC (2018). Specialty-care access for community health clinic patients: processes and barriers. *Journal of Multidisciplinary Healthcare*, 11:109–19.
Fahrni ML, Azmy MT, Usir E, Aziz NA, Hassan Y (2019). Inappropriate prescribing defined by STOPP and START criteria and its association with adverse drug events among hospitalized older patients: a multicentre, prospective study. *PLoS ONE*, 14(7):1–20.
Families USA (2011). The Affordable Care Act: Patients' Bill of Rights and other protections. Available at: https://familiesusa.org/resources/the-affordable-care-act-patients-bill-of-rights-and-other-protections/ (accessed 1 July 2020).
FDA (2011a). Overview of device regulation. Food and Drug Administration. Available at: http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/Overview/default.htm (accessed 1 July 2020).
FDA (2011b). Medical device safety. Food and Drug Administration. Available at: http://www.fda.gov/MedicalDevices/Safety/default.htm (accessed 1 July 2020).
FDA (2012). *Implementation of the Biologics Price Competition and Innovation Act of 2009*. Available at: http://www.fda.gov/Drugs/GuidanceComplianceRegulatoryInformation/ucm215089.htm (accessed 20 October 2020).
Feagin J, Bennefield Z (2014) Systematic racism and US health care. *Social Science and Medicine*, 103:7–14.
Feder JM (1977). *Medicare: the politics of federal hospital insurance.* Lanham MD: Lexington Books.
Federation of American Scientists (2011). Office of Technology Assessment Act. Available at: https://ota.fas.org/technology_assessment_and_congress/otaact/ (accessed 1 July 2020).
Federal Reserve Bank of St Louis (2018). Value added by industry: value added by industry as a percentage of gross domestic product. Available at: https://fred.stlouisfed.org/release/tables?rid=331&eid=211 (accessed 15 February 2019).
Felder TM et al. (2011). What is the evidence for pharmaceutical patient assistance programs? A systematic review. *Journal of Health Care for the Poor and Underserved*, 22:24–49.
Fernández-Alemán JL, Señor IC, Lozoya PÁO, Toval A (2013). Security and privacy in electronic health records: a systematic literature review. *Journal of Biomedical Informatics*, 46(3):541–62.
Fernandez-Lazaro CI, Adams DP, Fernandez-Lazaro D, Garcia-González JM, Caballero-Garcia A, Miron-Canelo JA (2018). Medication adherence and barriers among low-income, uninsured patients with multiple chronic conditions. *Research in Social and Administrative Pharmacy*: On-line First.

Ferrell BR, Twaddle ML, Melnick A, Meier DE (2018). National Consensus Project clinical practice guidelines for quality palliative care guidelines. 4th edn. *Journal of Palliative Medicine*, 21(12):1684–9.

Ferrier GD, Valdmanis VG (2008). Efficiency and productivity changes in large urban hospitals 1994–2002: ownership, markets, and the uninsured. In JT Blank & VG Valdmanis (eds.), Evaluating hospital policy and performance: contributions from hospital policy and productivity research. Amsterdam: Elsevier, 157–76.

Field R (2007). Health care regulation in America. Oxford: Oxford University Press.

Finkelstein EA (2005). The aggregate effects of health insurance evidence from the introduction of Medicare. National Bureau of Economic Research, Working paper no. 11619. Available at: https://economics.mit.edu/files/788 (accessed 20 October 2020).

Finkelstein EA et al. (2009). Annual medical spending attributable to obesity: payer-and service-specific estimates. *Health Affairs* (web exclusive), 27 July:W822–31.

Fiore DC, Fettic LP, Wright SD, Ferrara BR (2017). Antibiotic overprescribing: still a major concern. *Journal of Family Practice*, 66(12):730–6.

Flynn L, Aiken LH (2002). Does international nurse recruitment influence practice values in US hospitals? *Journal of Nursing Scholarship*, 34(1):67–73.

Forbes (2018). The biggest health insurers in the US. Forbes. Available at: https://www.forbes.com/pictures/5a8c601ca7ea43169013eb91/clone-of-americas-biggest/#7ead53c91e72 (accessed 12 January 2019).

Forrest CB (2009). A typology of specialists' clinical roles. *Archives of Internal Medicine*, 169(11):1062–8.

Fowler R et al., (2010). The association between health insurance status and access, care delivery, and outcomes for patients who are critically ill. *American Journal of Respiratory & Critical Care Medicine*, 181(9):1003–11.

Fox S, Duggan M (2013). Health Online. Washington, DC: Pew Internet & American Life; Jan 15. Available at: https://www.pewresearch.org/internet/2013/01/15/health-online-2013-2/ (accessed 20 October 2020).

Frandsen BR, Joynt KE, Rebitzer JB, Jha AK (2015). Care fragmentation, quality, and costs among chronically ill patients. *American Journal of Managed Care*, 21(5):355–62.

Friedberg MW, Chen PG, Van Busum KR, Aunon F, Pham C, Caloyeras J et al. (2014). Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. *Rand Health Quarterly*, 3(4):1.

Friedman M, Friedman RD, (1990). *Free to choose: a personal statement*. New York, NY: Mariner Books.

Friedman MS et al. (2001). Impact of changes in transportation and commuting behaviors during the 1996 summer Olympic Games in Atlanta on air quality and childhood asthma. *JAMA*, 285(7):897–905.

Frisch S (2013). The primary care physician shortage. *BMJ (Clinical Research Ed.)*, 347:f6559.

Fronstin P (2016). Self-insured health plans: recent trends by firm size, 1996–2015. Available at: https://www.ebri.org/pdf/notespdf/EBRI_Notes_07-no7-July16.Self-Ins.pdf (accessed 2 May 2018).

Frost A, Hargraves J (2018). Trends in primary care visits. Health Care Cost Institute (HCCI) Brief. Available at: https://www.healthcostinstitute.org/research/publications/hcci-research/entry/trends-in-primary-care-visits (accessed 20 October 2020).

Fulton BD (2017). Health care market concentration trends in the United States: evidence and policy responses. *Health Affairs*, 36(9):1530–8.

Furukawa MF, Spector WD, Limcangco MR, Encinosa WE, Rhona Limcangco M (2017). Meaningful use of health information technology and declines in in-hospital adverse drug events. *Journal of the American Medical Informatics Association*, 24(4):729–36.

Gabel JR (1999). Job-based health insurance, 1977–1988: the accidental system under scrutiny. *Health Affairs*, 18(6):62–74.

Gabel JR, Redisch MA (1979). Alternative physician payment methods: incentives, efficiency, and national health insurance. *Milbank Memorial Fund Quarterly*, 57(1):38–59.

Gabel JR, Jensen GA, Hawkins S (2003). Self-insurance in times of growing and retreating managed care. *Health Affairs*, 22:202–10.

Gabow P, Halvorson G, Kaplan G (2012). Marshaling leadership for high-value health care: an Institute of Medicine discussion paper. *JAMA*, 308(3):239–240. Available at: http://jama.jamanetwork.com/article.aspx?articleid=1172505#ref-jvp120035-8 (accessed 1 July 2020).

Galewitz P (2011). Some programs OK'd by health law lack funding. *Kaiser Health News*, 9 June 2011. Available at: http://www.kaiserhealthnews.org/Stories/2011/June/09/unfunded-appropriations-health-law.aspx (accessed 1 July 2020).

Galewitz P, Andrews M (2010). New rules guarantee patients' right to appeal insurance claim denials. *Kaiser Health News*, 22 July 2010. Available at: http://www.kaiserhealthnews.org/Stories/2010/July/22/insurance-denials.aspx (accessed 1 July 2020).

Gallup (2019). US uninsured rate rises to four-year high. Available at: https://news.gallup.com/poll/246134/uninsured-rate-rises-four-year-high.aspx (accessed 22 February 2019).

Galston W (2010). Why a hyper-polarized party system weakens America's democracy. *The Hedgehog Review* (Fall). Available at: https://hedgehogreview.com/issues/does-religious-pluralism-require-secularism/articles/why-a-hyper-polarized-party-system-weakens-americas-democracy (accessed 1 July 2020).

Gani F, Diaz A, Johnston FM, Pawlik TM, Canner JK (2018). Comparison of clinical and financial outcomes at urban and rural hospitals among patients receiving inpatient surgical care. *Journal of the American College of Surgeons*, 227:S140–1.

Garets D, Davis M (2006). Electronic medical records vs. electronic health records: yes, there is a difference. *HIMSS Analytics White Paper,* updated 26 January 2006. Available at: https://docplayer.net/661522-Electronic-medical-records-vs-electronic-health-records-yes-there-is-a-difference-a-himss-analytics-tm-white-paper-by-dave-garets-and-mike-davis.html (accessed 1 July 2020).

Garfield R, Rudowitz R, Musumeci M (2018). Implications of a Medicaid work requirement: national estimates of potential coverage losses. Kaiser Family Foundation. Available at: https://www.kff.org/medicaid/issue-brief/implications-of-a-medicaid-work-requirement-national-estimates-of-potential-coverage-losses/ (accessed 30 May 2019).

Garfinkel D, Mangin D (2010). Feasibility study of a systematic approach for discontinuation of multiple medications in older adults: addressing polypharmacy. *Archives of Internal Medicine*, 170(18):1648–54.

Gastala NM, Wingrove P, Gaglioti A, Petterson S, Bazemore A (2016). Medicare Part D: patients bear the cost of "me too" brand-name drugs. *Health Affairs*, 35(7):1237–40.

GBD 2015 Healthcare Access and Quality Collaborators (2017). Healthcare access and quality index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990–2015: a novel analysis from the Global Burden of Disease Study 2015. *The Lancet*, 390(10091):P231–66.

George MG et al. (2011). Trends in stroke hospitalizations and associated risk factors among children and young adults, 1995–2008. *Annals of Neurology*, 70:713–21.

Georgetown University Long-Term Care Financing Project (2007). *Medicare long-term care fact sheet*. Available at: http://ltc.georgetown.edu/pdfs/medicare0207.pdf (accessed 1 July 2020).

Gitterman P, Scott JC (2011). Obama lies, grandma dies: the uncertain politics of Medicare and the Patient Protection and Affordable Care Act. *Journal of Health Politics, Policy and Law*, 36(3):555–63.

Golann D (2011). Dropped medical malpractice claims: their surprising frequency, apparent causes, and potential remedies. *Health Affairs*, 30(7):1343–9.

Golder D (2016). MIPS, MACRA & MU — the next evolution of healthcare payment reform. Impact Advisors Website. Available at: https://www.impact-advisors.com/regulatory/meaningful-use/mips-macra-mu-the-next-evolution-of-healthcare-payment-reform/ (accessed 20 October 2020).

Goldman HH (2017). Maintaining ACA's gains in insurance coverage and improving access to behavioral health care. *Psychiatric Services (Washington DC)*, 68(6):529.

Goodfellow A, Ulloa JG, Dowling PT, Talamantes E, Chheda S, Bone C et al. (2016). Predictors of primary care physician practice location in underserved urban or rural areas in the United States: a systematic literature review. *Academic Medicine: Journal of the Association of American Medical Colleges*, 91(9):1313–21.

Goodnough A (2012). Insurance rebates seen as selling point for health law. *New York Times*, 30 July 2012. Available at: http://www.nytimes.com/2012/07/31/health/policy/insurance-rebates-seen-as-early-benefit-of-health-care-law.html?_r=1&nl=health&emc=edit_hh_20120731&pagewanted=print (accessed 1 July 2020).

Goodnough A, Sack K (2011). Massachusetts tries to rein in its health costs. *New York Times*, 17 October 2011. Available at: https://www.nytimes.com/2011/10/18/us/massachusetts-tries-to-rein-in-its-health-care-cost.html (accessed 1 July 2020).

Government Accountability Office (2005). Ultimate effects of McCarran-Ferguson federal antitrust exemption on insurer activity are unclear. Available at: http://www.gao.gov/assets/100/93507.html (accessed 1 July 2020).

Graham C, Ross L, Bueno EB, Harrington C (2018). Assessing the quality of nursing homes in managed care organizations: integrating LTSS for dually eligible beneficiaries. Inquiry 55. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6144495/ (accessed 1 July 2020).

Greene B (2020). What benefit managers need to know about HRAs in 2020. EBN. Available at: https://www.benefitnews.com/opinion/new-hra-in-2020-what-employers-need-to-know (accessed 27 June 2020).

Greenlee K (2011). Memorandum on the CLASS Program. *Wall Street Journal*, 14 October 2011. Available at: http://online.wsj.com/public/resources/documents/Classdecision.pdf (accessed 1 July 2020).

Greer SL (2011). The states' role under the Patient Protection and Affordable Care Act. *Journal of Health Politics, Policy and Law*, 36(3):469–73.

Grogan CM (2011). You call it public, I call it private; let's call the whole thing off. *Journal of Health Politics, Policy and Law*, 36(3):401–11.

Grossman JM, Zayas-Cabán T, Kemper N (2009). Information gap: can health insurer personal health records meet patients' and physicians' needs? *Health Affairs*, 28(2):177–89.

Gugelmann HM, Perrone J (2011). Can prescription drug monitoring programs help limit opioid abuse? *JAMA*, 306(20):2258–9.

Gulley S, Rasch E, Chan L (2011). Ongoing coverage for ongoing care: access, utilization, and out-of-pocket spending among uninsured working-aged adults with chronic health care needs. *American Journal of Public Health*, 101(2):368–75.

Gurewitsch Allen ED, Bittle MJ (2015). Linking Medicaid expansion and cuts to disproportionate-share hospitals: will safety nets survive? *Obstetrics and Gynecology*, 126(2):442–5.

Guterman S (2006). Specialty hospitals: a problem or a symptom? *Health Affairs*, 25(1):95–105.

Guterman S, Skopec L, Zuckerman S (2018). Do Medicare Advantage plans respond to payment changes? A look at the data from 2009 to 2014. The Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2018/mar/do-medicare-advantage-plans-respond-payment-changes-look-data?redirect_source=/publications/issue-briefs/2018/mar/do-medicare-advantage-plans-respond-to-payment-changes (accessed 8 January 2019).

Gwet P, Anderson J, Machlin S (2016). Out-of-pocket health care expenses in the US civilian noninstitutionalized population by age and insurance coverage, 2014. Available at: https://meps.ahrq.gov/data_files/publications/st495/stat495.pdf) (accessed 20 October 2020).

Gyawali B, Prasad V (2018). Me too-drugs with limited benefits – the tale of regorafenib for HCC. *Nature Reviews Clinical Oncology*, 15(1):62.

Hacker JS (2011). Why reform happened. *Journal of Health Politics, Policy and Law*, 36(3):437–441.

Hacker K, Santos P, Thompson D, Stout SS, Bearse A, Mechanic RE (2014). Early experience of a safety net provider reorganizing into an Accountable Care Organization. *Journal of Health Politics, Policy And Law*, 39(4):901–17.

Hadley J (2007). Insurance coverage, medical care use, and short-term health changes following an unintentional injury or the onset of a chronic condition. *JAMA*, 297(10):1073–84.

Hagander LE, Hughes CD, Nash K, Ganjawalla K, Linden A, Martins Y et al. (2013). Surgeon migration between developing countries and the United States: Train, retain, and gain from Brain Drain. *World Journal of Surgery*, 37:14–23.

Hagenaars LL, Klazinga NS, Mueller M, Morgan DJ, Jeurissen PPT (2018). How and why do countries differ in their governance and financing-related administrative expenditure in health care? An analysis of OECD countries by health care system typology. *International Journal of Health Planning and Management*, 33(1):e263–78. Available at: https://doi.org/10.1002/hpm.2458 (accessed 20 October 2020).

Hall MA (2011). Risk adjustment under the Affordable Care Act: a guide for federal and state regulators. Issue Brief. Commonwealth Fund, May 2011. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2011/may/risk-adjustment-under-affordable-care-act-guide-federal-and (accessed 1 July 2020).

Hall MA (2013). Organizing uninsured safety-net access to specialist physician services. *Journal of Health Care for the Poor and Underserved*, 24(2):741–52.

Han B, Compton WM, Blanco C, Colpe LJ (2017). Prevalence, treatment, and unmet treatment needs of US adults with mental health and substance use disorders. *Health Affairs*, 36(10):1739–47.

Handy C, Sai M, Block L, de la Torre D, Langley A, Cook B (2013). Identifying patient, community and program specific barriers to free specialty care utilization by uninsured patients in East Baltimore. *Journal of Health Care for the Poor and Underserved*, 24(2):688–96.

Happ MB, Dabelko-Schoeny H, Shin JW (2018). Integration of post-acute care and hospice care in adult day services. *Geriatric Nursing (New York, NY)*, 39(3):356–7.

Harrington C, Carrillo H, Blank BW, O'Brian, T (2010). Nursing facilities, staffing, residents and facility deficiencies, 2004 through 2009. Web report. Available at: http://test.theconsumervoice.org/uploads/files/issues/OSCAR-2010.pdf (accessed 1 July 2020).

Harrington C, Mukamel D, Rosenau P (2012). Exploring the concept of medical loss ratios (MLRs) for nursing homes. Issue Brief. Prepared for the Kaiser Family Foundation.

Harrington C, Schnelle JF, McGregor M, Simmons SF (2016). The need for higher minimum staffing standards in US nursing homes. *Health Services Insights*, 9:13–19.

Harrington C et al. (2018). Nursing facilities, staffing, residents, and facility deficiencies, 2009 through 2016. Washington, DC: Kaiser Family Foundation.

Harrington L, Kennerly D, Johnson C (2011). Safety issues related to the electronic medical record (EMR): synthesis of the literature from the last decade, 2000–2009. *Journal of Healthcare Management*, 56:31–44.

Harris G (2011a). Agency head outlines difficulties and risks of food and drug imports. *New York Times*, 21 June 2011.

Harris G (2011b). Family physician can't give away solo practice. *New York Times*, 22 April 2011. Available at: http://www.nytimes.com/2011/04/23/health/23doctor.html?_r=1&pagewanted=1&hp (accessed 1 July 2020).

Harris-Kojetin L, Sengupta M, Lendon JP, Rome V, Valverde R, Caffrey C (2019). Long-term care providers and services users in the United States, 2015–2016. National Center for Health Statistics. Vital Health Stat 3(43). Available at: https://www.cdc.gov/nchs/data/series/sr_03/sr03_43-508.pdf) (accessed 20 October 2020).

Hartford (2012). Public poll: Silver and Blue – the unfinished business of mental health care for older adults. John A. Hartford Foundation. Available at: https://www.mdjustice.org/node/3045 (accessed 20 October 2020).

Harvard Health Letter (2014). How to stay in your own home longer. Home health care and private duty care can help you maintain your independence in a familiar space. Harvard Health Letter, 39(3):1.

Hassett MJ, Schymura MJ, Chen K, Boscoe FP, Gesten FC, Schrag D (2016). Variation in breast cancer care quality in New York and California based on race/ethnicity and Medicaid enrollment. *Cancer*, 122(3):420–31.

Hauck K, Zhao X (2011). How dangerous is a day in hospital?: a model of adverse events and length of stay for medical inpatients. *Medical Care,* 49(12):1068–75.

Haught R, Dobson A, Luu P-H (2019). How will Medicaid work requirements affect hospitals' finances? Issue Brief. *Commonwealth Fund*. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2019/mar/how-will-medicaid-work-requirements-affect-hospitals-finances (accessed 30 May 2019).

Haveman R, Blank R, Moffitt R, Smeeding T, Wallace G (2015). The war on poverty: measurement, trends, and policy. *Journal of Policy Analysis and Management*, 34(3):593–638.

Hawkins M (2018). 2018 survey of America's physicians: practice patterns and perspectives. Report prepared for Physician's Foundation. Available at: https://physiciansfoundation.org/research-insights/the-physicians-foundation-2018-physician-survey/) (accessed 20 October 2020).

Hawley G, Jackson C, Hepworth J, Wilkinson SA (2014). Sharing of clinical data in a maternity setting: how do paper hand-held records and electronic health records compare for completeness? *BMC Health Services Research*, 14(1):547–63.

Haymes SN, Haymes MV, Miller RJ eds (2015). Routledge handbook of poverty in the United States. New York: Routledge, 7.

HCCI (2018). HCCI Brief: trends in primary care visits. Health Care Cost Institute. Available at: https://www.healthcostinstitute.org/research/publications/hcci-research/entry/trends-in-primary-care-visits) (accessed 20 October 2020).

Health Affairs (2011). Pay for Performance. Available at: https://doi.org/10.1377/hpb20121011.90233 (accessed 20 August 2018).

Health Affairs Health Policy Brief (2018). Health, income and poverty: where we are and what could help. Health Affairs Health Policy Brief, October 2018.

HealthPocket (2017). Average market premiums spike across Obamacare plans in 2018. Available at: https://www.healthpocket.com/healthcare-research/infostat/2018-obamacare-premiums-deductibles (accessed 20 October 2020).

Helms RB (2008). Tax policy and the history of the health insurance industry. American Enterprise Institute. Available at: https://www.aei.org/research-products/working-paper/tax-policy-and-the-history-of-the-health-insurance-industry/ (accessed 1 July 2020).

Helvin L (2008). Caring for the uninsured: are not-for-profit hospitals doing their share? *Yale Journal of Health Policy, Law, and Ethics*, 8(2):421–70.

Henry J, Pylypchuk Y, Searcy T, Patel V (2016). Adoption of Electronic Health Record systems among US non-federal acute care hospitals: 2008–2015. Office of the National Coordinator for Health Information Technology, Data Brief 35, May 2016.

Herman D, Afulani P, Coleman-Jensen A, Harrison GG (2015). Food insecurity and cost-related medication underuse among nonelderly adults in a nationally representative sample. *American Journal of Public Health*, 105(10):e48–59.

Herrel LA, Ayanian JZ, Hawken SR, Miller DC (2017). Primary care focus and utilization in the Medicare shared savings program accountable care organizations. *BMC Health Services Research*, 17(1):139.

Hiller EH, Landenburger G, Natowicz MR (1997). Public participation in medical policy-making and the status of consumer autonomy; the example of newborn-screening programs in the US. *American Journal of Public Health*, 87(8):1280–8.

Himmelstein D et al. (2005). Marketwatch: illness and injury as contributors to bankruptcy. *Health Affairs*, 10:63–7.

Himmelstein DU, Lawless RM, Thorne D, Foohey P, Woolhandler S (2019). Medical bankruptcy: still common despite the Affordable Care Act. *American Journal of Public Health*, 109(3):431–3. Available at: https://doi.org/10.2105/AJPH.2018.304901) (accessed 20 October 2020).

Hing E, Hsiao C (2010). Electronic medical record use by office-based physicians and their practices: United States, 2007. *National Health Statistics Reports*, 23:1–11.

Hing E, Decker S, Jamoom E (2015). Acceptance of new patients with public and private insurance by office-based physicians: United States, 2013. CDC. Available at: https://www.cdc.gov/nchs/data/databriefs/db195.pdf (accessed 14 January 2019).

Ho V, Metcalfe L, Dark C, Vu L, Weber E, Shelton G, Underwood HR (2017). Comparing utilization and costs of care in freestanding emergency departments, hospital emergency departments, and urgent care centers. *Annals of Emergency Medicine*, 70(6):846–57, e3.

Hodgkin D, Horgan CM, Stewart MT, Quinn AE, Creedon TB, Reif S et al. (2018). Federal parity and access to behavioral health care in private health plans. *Psychiatric Services*, 69(4):396–402.

Hoff T, Prout K (2019). Comparing retail clinics with other sites of care: a systematic review of cost, quality, and patient satisfaction. *Medical Care*, July 2019: Online First.

Hoff T, Weller W, Depuccio M (2012). The patient-centered medical home: a review of recent research. *Medical Care Research & Review*, 69(6):619–44.

Hogan SO, Kissam SM (2010). Measuring meaningful use. *Health Affairs*, 29(4):601–6.

Holgash K, Heberlein M (2019). Physician acceptance of new Medicaid patients: what matters and what doesn't. *Health Affairs Blog*, 10 April 2019. Available at: https://www.healthaffairs.org/do/10.1377/hblog20190401.678690/full/) (accessed 20 October 2020).

Hollenbeck B et al. (2010). Ambulatory surgery center market share and rates of outpatient surgery in the elderly. *Surgical Innovation*, 17(4):340–5.

Hollenbeck BK, Dunn RL, Suskind AM, Strope SA, Zhang Y, Hollingsworth JM (2015). Ambulatory surgery centers and their intended effects on outpatient surgery. *Health Services Research*, 50(5):1491–1507.

Housten AJ et al. (2016). Stakeholder perceptions of ways to support decisions about health insurance marketplace enrollment: a qualitative study. *BMC Health Services Research*, 16:634.

Howard J et al. (2010). New legal protections for reporting patient errors under the patient safety and quality improvement act: a review of the medical literature and analysis. *Journal of Patient Safety*, 6(3):147–52.

HRSA (2012). What is a health center? Health Resources & Services Administration website. Available at: https://bphc.hrsa.gov/about/what-is-a-health-center/index.html (accessed 1 July 2020).

HRSA (2016). National and regional projections of supply and demand for primary care practitioners, 2013–2025. US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis, August 2017. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/health-workforce-analysis/research/projections/primary-care-national-projections2013-2025.pdf (accessed 27 June 2020).

HRSA (2017). Sex, race, and ethnic diversity of US health occupations (2011–2015). US Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Workforce, National Center for Health Workforce Analysis, August 2017. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/diversityushealthoccupations.pdf (accessed 27 June 2020).

HRSA (2018). Health equity report 2017. US Department of Health and Human Services, Health Resources and Services Administration, Office of Health Equity. Rockville, MD.

Hsieh HM, Bazzoli GJ (2012). Medicaid disproportionate share hospital payment: how does it impact hospitals' provision of uncompensated care? *Inquiry (00469580)*, 49(3):254–67.

Hsu ES (2017). Medication overuse in chronic pain. *Current Pain and Headache Reports*, 21(1):2.

Hu J, Jordan J, Rubinfeld I, Schreiber M, Waterman B, Nerenz D (2017). Correlations among hospital quality measures: what 'Hospital Compare' data tell us. *American Journal of Medical Quality: the Official Journal of the American College of Medical Quality*, 32(6):605–10.

Hughes R et al. (2011). State boards of health; governance and politics. *Journal of Law, Medicine & Ethics*, 39(1):37–41 (suppl).

Hurley RE, Strunk BC, White JS (2004). The puzzling popularity of the PPO. *Health Affairs*, 23(2):56–68.

Hyman HH (1982). Health planning: a systematic approach. Rockville, MD: Aspen Publishing, 69.

Iglehart JK (2010). The political fight over comparative effectiveness research. *Health Affairs*, 29(10):1757–60.

Internal Revenue Service (2020). Small business health care tax credit and the SHOP marketplace. Available at: https://www.irs.gov/affordable-care-act/employers/small-business-health-care-tax-credit-and-the-shop-marketplace (accessed 27 June 2020).

Investopedia (2018). Alert: shorter enrollment for Affordable Care Act again this year. Available at: https://www.investopedia.com/insurance/open-enrollment-affordable-care-act-shorter-this-year/ (accessed 3 April 2019).

IOM (1981). Health planning in the United States: selected policy issues. Vol I. Institute of Medicine, Committee on Health Planning Goals and Standards. Washington, DC: National Academies Press.

IOM (1994). Defining primary care: an interim report. Institute of Medicine, Committee on the Future of Primary Care. Washington, DC: National Academies Press.

IOM (2000). To err is human. Institute of Medicine. Washington, DC: National Academies Press.

IOM (2006a). Improving the quality of health care for mental and substance-use conditions. Institute of Medicine. Washington, DC: National Academies Press.

IOM (2006b). *Food marketing to children and youth: threat or opportunity?* Available at: https://www.nap.edu/read/11514/chapter/1 (accessed 20 October 2020).

IOM (2010). The healthcare imperative: lowering costs and improving outcomes. Institute of Medicine. Washington, DC: National Academies Press.

IOM (2012). Primary care and public health: exploring integration to improve population health. Institute of Medicine. Washington, DC: National Academies Press. Available at: https://doi.org/10.17226/13381) (accessed 20 October 2020).

IOM. (2015). Dying in America: improving quality and honoring individual preferences near the end of life. Institute of Medicine. Washington, DC: National Academies Press.
Jacobs LR, Skocpol T (2010). Health care reform and American politics; what everyone needs to know. New York: Oxford University Press.
Jacobs W, Amuta AO, Jeon KC (2017). Health information seeking in the digital age: an analysis of health information seeking behavior among US adults. *Cogent Social Sciences*, 3(1). Available at: https://doi.org/10.1080/23311886.2017.1302785) (accessed 20 October 2020).
Jacobson PD, Parmet WE (2019). Public health and health care: integration, disintegration, or eclipse. *Journal of Law, Medicine and Ethics*, 46(4):940–51.
Jaffe S (2018). Trump set to sign bills lifting pharmacist 'gag orders' on drug prices. NBC News, 10 October 2018. Available at: https://www.nbcnews.com/health/health-news/trump-set-sign-bills-lifting-pharmacist-gag-orders-drug-prices-n918361 (accessed 4 April 2019).
Japsen B (2018). Why doctor malpractice premiums stopped rising. Available at: https://www.forbes.com/sites/brucejapsen/2018/10/10/why-doctor-malpractice-premiums-stopped-rising/#19b10d311517 (accessed 7 January 2019).
Jarrott S, Ogletree AM (2019). Adult day services outcomes: Delphi review of an integrated participant assessment system. *Journal of Applied Gerontology: the Official Journal of the Southern Gerontological Society*, 38(3):386–405.
Jena AB et al. (2011). Malpractice risk according to physician specialty. *New England Journal of Medicine*, 365(7):629–36.
Jha AK (2017). Value-based purchasing: time for reboot or time to move on? *JAMA*, 317(11):1107–8.
Jha AK (2018). Accreditation, quality, and making hospital care better. *JAMA*, 320(23):2410–11.
Jha AK, Iliff AR, Chaoui AA, Defossez S, Bombaugh MC, Miller YR (2019). A crisis in health care: a call to action on physician burnout. *Massachusetts Medical Society*, 17 January 2019. Available at: http://www.massmed.org/News-and-Publications/MMS-News-Releases/Physician-Burnout-Report-2018/) (accessed 20 October 2020).
Jha AK et al. (2003). Effect of the transformation of the Veterans Affairs Health Care System on the quality of care. *New England Journal of Medicine*, 348(22):2218–27.
Jha AK et al. (2009). Use of electronic health records in US hospitals. *New England Journal of Medicine*, 360(16):1628–38.
Jiwani A, Himmelstein D, Woolhandler S, Kahn JG (2014). Billing and insurance-related administrative costs in United States' health care: synthesis of micro-costing evidence. *BMC Health Services Research*, 14(1):556. Available at: https://doi.org/10.1186/s12913-014-0556-7 (accessed 20 October 2020).
Johnson H, Broder DA (1996). The system: the American way of politics at the breaking point. Boston, MA: Little, Brown.
Johnson RW (2016). Who is covered by private long-term care insurance? Available at: https://www.urban.org/sites/default/files/publication/83146/2000881-Who-Is-Covered-by-Private-Long-Term-Care-Insurance.pdf (accessed 4 February 2019).
Joint Commission (2017). Facts about hospital accreditation. Available at: https://www.jointcommission.org/facts_about_hospital_accreditation/ (accessed 1 May 2018).
Joseph KS et al. (2012). Influence of definition based versus pragmatic birth registration on international comparisons of perinatal and infant mortality: population based retrospective study. *BMJ*, 344:e746.
Joshi DK, Bluhm RA, Malani PN, Fetyko S, Denton T, Blaum CS (2012). The successful development of a subacute care service associated with a large academic health system. *Journal of the American Medical Directors Association*, 13(6):564–7.
Jost TS (2007). Health care at risk: a critique of the consumer-driven movement. Durham, NC: Duke University Press.

Jost TS, Hall MA (2011). Not so fast – jurisdictional barriers to the ACA litigation. *New England Journal of Medicine*, 365:e34. Available at: https://www.nejm.org/doi/full/10.1056/nejmp1111295 (accessed 1 July 2020).

Jost TS, Rosenbaum S (2012). The Supreme Court and the future of Medicaid. *New England Journal of Medicine*, 367:983–5.

Journal of Health Politics, Policy and Law (1999). The managed care backlash. *Journal of Health Politics, Policy and Law*, Special issue, vol. 24.

Joynt KE, Harris Y, Orav EJ, Jha AK (2011). Quality of care and patient outcomes in critical access rural hospitals. *JAMA*, 306(1):45–52.

Joynt KE, Bhatt DL, Schwamm LH, Xian Y, Heidenreich PA, Fonarow GC et al. (2015). Lack of impact of electronic health records on quality of care and outcomes for ischemic stroke. *Journal of the American College of Cardiology*, 65(18):1964–72.

Kaelin L (2011). A question of justice: assessing nurse migration from a philosophical perspective. *Developing World Bioethics*, 11(1):30–9.

Kahn JS, Aulakh V, Bosworth A (2009). What it takes: characteristics of the ideal personal health record. *Health Affairs*, 28(2):369–76.

Kaiser Family Foundation (2010). Medicaid and managed care: key data, trends, and issues. Available at: http://www.kff.org/medicaid/upload/8046.pdf (accessed 1 July 2020).

Kaiser Family Foundation (2011a). Summary of new Health Reform Law. Available at: http://www.kff.org/healthreform/upload/8061.pdf (accessed 1 July 2020).

Kaiser Family Foundation (2011b). The uninsured: a primer. Available at: https://www.issuelab.org/resource/the-uninsured-a-primer-2011.html (accessed 1 July 2020).

Kaiser Family Foundation (2011c). Individual elements of the ACA popular with the public. Kaiser November Health Tracking Poll. Health Reform Source. Available at: http://healthreform.kff.org/public-opinion.aspx (accessed 1 June 2020).

Kaiser Family Foundation (2011d). Grandfathering explained: health insurance and reform. Health Reform Source. Available at: https://www.kff.org/health-reform/perspective/grandfathering-explained/ (accessed 1 July 2020).

Kaiser Family Foundation (2012a). State health facts: Medicaid benefits: prescription drugs. Available at: https://www.kff.org/medicaid/state-indicator/prescription-drugs/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 8 January 2019).

Kaiser Family Foundation (2012b). Glossary. Available at: http://www.kaiserhealthnews.org/glossary.aspx (accessed 1 July 2020).

Kaiser Family Foundation (2012c). Kaiser slides. Available at: http:facts.kff.org/ (accessed 19 April 2013).

Kaiser Family Foundation (2013). State health facts: Medicaid enrollment and spending on HIV/AIDS. Available at: https://www.kff.org/hivaids/state-indicator/enrollment-spending-on-hiv/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7 (accessed 8 January 2019).

Kaiser Family Foundation (2014). Health care expenditures per capita by state of residence. Available at: https://www.kff.org/other/state-indicator/health-spending-per-capita/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 21 March 2018).

Kaiser Family Foundation (2015). Medicaid and long-term care services and supports. Available at: http://kaiserfamilyfoundation.files.wordpress.com/2013/01/2186-09.pdf (accessed 20 August 2018).

Kaiser Family Foundation (2016). Medicaid-to-Medicare fee index. Available at: https://www.kff.org/medicaid/state-indicator/medicaid-to-medicare-fee-index/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 20 August 2018).

Kaiser Family Foundation (2017a). Analysis of data from OECD (2017), 'OECD Health Data: Health expenditure and financing: Health expenditure indicators'. Available at: https://www.healthsystemtracker.org/chart-collection/health-spending-u-s-compare-countries/?_sf_s=health+spending#item-start (accessed 17 March 2019).
Kaiser Family Foundation (2017b). The uninsured: a primer. Available at: http://files.kff.org/attachment/Report-The-Uninsured-A-Primer-Key-Facts-about-Health-Insurance-and-the-Uninsured-Under-the-Affordable-Care-Act (accessed 22 May 2018).
Kaiser Family Foundation (2017c). Medicare Advantage. Available at: http://files.kff.org/attachment/Fact-Sheet-Medicare-Advantage (accessed 6 August 2015).
Kaiser Family Foundation (2017d). Overview of Medicare. Available at: https://www.kff.org/medicare/issue-brief/an-overview-of-medicare/ (accessed 8 January 2019).
Kaiser Family Foundation (2017e). State health facts: health insurance coverage of the nonelderly (0–64) with incomes below 100% federal poverty level (FPL). Available at: https://www.kff.org/other/state-indicator/nonelderly-up-to-100-fpl/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 8 January 2019).
Kaiser Family Foundation (2017f). State health facts: Medicaid and CHIP. Available at: https://www.kff.org/state-category/medicaid-chip/births-financed-by-medicaid/ (accessed 8 January 2019).
Kaiser Family Foundation (2017g). State health facts: Medicaid eligibility through the aged, blind, disabled pathway. Available at: https://www.kff.org/medicaid/state-indicator/medicaid-eligibility-through-the-aged-blind-disabled-pathway/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 8 January 2019).
Kaiser Family Foundation (2017h). Health coverage of immigrants. Available at: https://www.kff.org/disparities-policy/fact-sheet/health-coverage-of-immigrants/ (accessed 8 January 2019).
Kaiser Family Foundation (2017i). Employer health benefits survey. Available at: https://www.kff.org/report-section/ehbs-2017-section-2-health-benefits-offer-rates/ (accessed 12 January 2019).
Kaiser Family Foundation (2017j). Medicaid managed care market tracker. Available at: https://www.kff.org/data-collection/medicaid-managed-care-market-tracker/ (accessed 20 August 2018).
Kaiser Family Foundation (2017k). Data note: a large majority of physicians participate in Medicaid. Available at: https://www.kff.org/medicaid/issue-brief/data-note-a-large-majority-of-physicians-participate-in-medicaid/ (accessed 14 January 2019).
Kaiser Family Foundation (2017l). Key facts about the uninsured population. Available at: https://nationaldisabilitynavigator.org/wp-content/uploads/news-items/KFF_Key-Facts-about-Uninsured_Sept-2017.pdf (accessed 5 November 2020).
Kaiser Family Foundation (2018a). Key facts about the uninsured population. Available at: https://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/ (accessed 29 March 2019).
Kaiser Family Foundation (2018b). Employer health benefits survey. Available at: http://files.kff.org/attachment/Report-Employer-Health-Benefits-Annual-Survey-2018 (accessed 7 January 2019).
Kaiser Family Foundation (2018c). Coverage of breast cancer screening and preventive services. Available at: https://www.kff.org/womens-health-policy/fact-sheet/coverage-of-breast-cancer-screening-and-prevention-services/ (accessed 29 March 2019).
Kaiser Family Foundation (2019a). Medicaid waiver tracker: approved and pending section 1115 waivers by state. Available at: https://www.kff.org/medicaid/issue-brief/medicaid-waiver-tracker-approved-and-pending-section-1115-waivers-by-state/ (accessed 6 January 2019).
Kaiser Family Foundation (2019b). Medicare health and prescription drug plans. Available at: https://www.kff.org/data-collection/medicare-health-and-prescription-drug-plans/ (accessed 8 January 2019).

Kaiser Family Foundation (2019c). Employer health benefits survey. Available at: https://www.kff.org/health-costs/report/2019-employer-health-benefits-survey/ (accessed 12 January 2019).

Kaiser Family Foundation (2019d). Marketplace average benchmark premiums. https://www.kff.org/health-reform/state-indicator/marketplace-average-benchmark-premiums/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (accessed 3 April 2019).

Kaiser Family Foundation (2019e). 10 things to know about Medicaid: setting the facts straight. Available at: https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-setting-the-facts-straight/ (accessed 4 April 2019).

Kaiser Family Foundation (2019f). KFF health tracking poll: the public's view on the ACA. Available at: https://www.kff.org/interactive/kff-health-tracking-poll-the-publics-views-on-the-aca/#?response=Favorable--Unfavorable&aRange=all (accessed 3 April 2019).

Kaiser Family Foundation (2019g). Poll: majorities favor a range of options to expand public coverage, including Medicare-for-all. Available at: https://www.kff.org/health-reform/press-release/poll-majorities-favor-a-range-of-options-to-expand-public-coverage-including-medicare-for-all/ (accessed 29 March 2019).

Kaiser Family Foundation (2019h). Health coverage of immigrants. Available at: https://www.kff.org/disparities-policy/fact-sheet/health-coverage-of-immigrants/ (accessed March 29, 2019).

Kaiser Family Foundation (2019i). Hospital admissions per 1,000 population by ownership type. Available at: https://www.kff.org/other/state-indicator/admissions-by-ownership/?activeTab=graph&currentTimeframe=17&startTimeframe=18&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D) (accessed 20 October 2020).

Kaiser Family Foundation (2020a). Private health coverage of COVID-19: key facts and issues. Available at: https://www.kff.org/coronavirus-covid-19/issue-brief/private-health-coverage-of-covid-19-key-facts-and-issues/ (accessed 20 October 2020).

Kaiser Family Foundation (2020b). KFF tracking poll: the public's views on the ACA. 27 May. Available at: https://www.kff.org/interactive/kff-health-tracking-poll-the-publics-views-on-the-aca/#?response=Favorable--Unfavorable&group=Party%2520ID::Independent&aRange=twoYear (accessed 27 June 2020).

Kaiser Family Foundation (2020c). Public opinion on single-payer, national health plans, and expanding access to Medicare coverage. 27 May. Available at: https://www.kff.org/slideshow/public-opinion-on-single-payer-national-health-plans-and-expanding-access-to-medicare-coverage/) (accessed 20 October 2020).

Kaiser Family Foundation and Health Research & Educational Trust (2010). Employer health benefits: 2010 annual survey. Available at: https://www.kff.org/wp-content/uploads/2013/04/8085.pdf (accessed 1 July 2020).

Kaiser Health News (2019). Breaking a 10-year streak, the number of uninsured Americans rises. Available at: https://khn.org/news/number-of-americans-without-insurance-rises-in-2018/ (accessed 18 October 2019).

Kaiser Health Tracking Poll (2012). Early reaction to Supreme Court decision on ACA. Available at: https://www.kff.org/health-reform/poll-finding/kaiser-health-tracking-poll-early-reaction-to/ (accessed 1 July 2020).

Kanavos P, Gemmill-Toyama M (2010). Prescription drug coverage among elderly and disabled Americans: can Medicare Part D reduce inequities in access? *International Journal of Health Care Finance and Economics*, 10(3):203–18.

Kane L (2018). Medscape Physician Compensation Report, 11 April 2018. Available at: https://login.medscape.com/login/sso/getlogin?urlCache=aHR0cHM6Ly93d3cubWVkc2NhcGUuY29tL3NsaWRlc2hvdy8yMDE4LWNvbXBlbnNhdGlvbi1vdmVydmlldy02MDA5NjY3&ac=401 (accessed 20 October 2020).

Kangovi S, Barg F, Carter T, Long JA, Shannon R, Grande D (2013). Understanding why patients of low socioeconomic status prefer hospitals over ambulatory care. *Health Affairs*, 32(7):1196–1203.

Karaca-Mandic et al. (2015). States with stronger health insurance rate review authority experienced lower premiums in the individual market in 2010–13. *Health Affairs*, 34(8):1358–67.

Karma R (2020). 'Deaths of despair': the deadly epidemic that predates coronavirus. Available at: https://www.vox.com/2020/4/15/21214734/deaths-of-despair-coronavirus-covid-19-angus-deaton-anne-case-americans-deaths (accessed 20 October 2020).

Kates J, Dawson L (2017). Insurance coverage changes for people with HIV under the ACA. Available at: https://www.kff.org/health-reform/issue-brief/insurance-coverage-changes-for-people-with-hiv-under-the-aca/ (accessed 12 January 2019).

Kautter J, Pope G, Keenan P (2014). Affordable Care Act risk adjustment: overview, context, and challenges. *Medicare and Medicaid Research Review*, Vol. 4. Available at: https://www.cms.gov/mmrr/Downloads/MMRR2014_004_03_a02.pdf) (accessed 20 October 2020).

Kazley A, Ozcan Y (2008). Do hospitals with electronic medical records (EMRs) provide higher quality care? *Medical Care Research and Review*, 65(4):496–513.

Kazley AS, Simpson AN, Simpson KN, Teufel R (2014). Association of electronic health records with cost savings in a national sample. *American Journal of Managed Care*, 20(6):e183–90.

Keith K (2018a). The short-term, limited-duration coverage final rule: the background, the content, and what could come next. *Health Affairs* blog, 1 August. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180801.169759/full/ (accessed 30 May 2019).

Keith K (2018b). Two new federal surveys show stable uninsured rate. *Health Affairs* blog, 13 September. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180913.896261/full/ (accessed 29 March 2019).

Keith K (2020). Supreme Court rules that insurers are entitled to risk corridors payments: what the court said and what happens next. *Health Affairs* blog, 28 April. Available at: https://www.healthaffairs.org/do/10.1377/hblog20200427.34146/full/) (accessed 27 June 2020.

Kennedy MS (2018). Nurses wanted – almost everywhere: it seems the nursing shortage has arrived. *AJN American Journal of Nursing*, 118(6):7.

Kepley HO, Streeter RA (2018). Closing behavioral health workforce gaps: a HRSA program expanding direct mental health service access in underserved areas. *American Journal of Preventive Medicine*, 54(6):S190–1.

Kessler G (2017). Medicare, private insurance and administrative costs: a Democratic talking point. *The Washington Post*, 19 September. Washington DC. Available at: https://www.washingtonpost.com/news/fact-checker/wp/2017/09/19/medicare-private-insurance-and-administrative-costs-a-democratic-talking-point/?utm_term=.9922f5cf2d8b) (accessed 20 October 2020).

Ketsche P et al. (2011). Low-income families pay a higher share of income towards national health care spending than higher-income families do. *Health Affairs*, 30(9):1–10.

Khullar D (2017). The unhealthy politics of pork: how it increases your medical costs. Available at: https://www.nytimes.com/2017/10/25/upshot/the-unhealthy-politics-of-pork-how-it-increases-your-medical-costs.html (accessed 3 April 2019).

Khullar D, Song Z, Chokshi D (2018). Safety-net health systems at risk: who bears the burden of uncompensated care? Available at: https://doi.org/10.1377/hblog20180503.138516) (accessed 20 October 2020).

Kielb ES, Rhyan CN, Lee JA (2017). Comparing health care financial burden with an alternative measure of unaffordability. *Inquiry: A Journal of Medical Care Organization, Provision and Financing*, 54:46958017732960.

Kirby JB, Sharma R (2017). The availability of community health center services and access to medical care. *Healthcare (Amsterdam, Netherlands)*, 5(4):174–82.

Klees B, Wolfe C, Curtis C (2009). Brief summaries of Medicare and Medicaid: Title XVIII and Title XIX of the Social Security Act. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/MedicareProgramRatesStats/downloads/MedicareMedicaidSummaries2009.pdf) (accessed 20 October 2020).

Kliff S (2013). The fiscal cliff cuts $1.9 billion from Obamacare. Here's how. *The Washington Post*, 2 January 2013. Available at: https://www.washingtonpost.com/news/wonk/wp/2013/01/02/the-fiscal-cliff-cuts-1-9-billion-from-obamacare-heres-how/?arc404=true (accessed 1 July 2020).

Knepper MW, Castillo EM, Chan TC, Guss DA (2018). The effect of access to electronic health records on throughput efficiency and imaging utilization in the emergency department. *Health Services Research*, 53(2):787–802.

Kochevar J et al. (2011). Electronic medical records: a survey of use and satisfaction in small dialysis organizations. *Nephrology Nursing Journal*, 38(3):273–81.

Koenig L, Gu Q (2013). Growth of ambulatory surgical centers, surgery volume, and savings to Medicare. *American Journal of Gastroenterology*, 108(1):10–15.

Kofman M, Pollitz K (2006). Health insurance regulation by states and the federal government: a review of current approaches and proposals for change. Washington, DC: Georgetown University Health Policy Institute. Available at: https://www-tc.pbs.org/now/politics/Healthinsurancereportfinalkofmanpollitz.pdf (accessed 1 July 2020).

Kohn LT et al. (eds.) (2000). To err is human: building a safer health system. Washington, DC: National Academies Press.

Korobkin R (2003). The failed jurisprudence of managed care, and how to fix it: reinterpreting ERISA preemption. *UCLA Law Review*, 51:457–537.

Krisberg K (2017). President's 2018 budget devastating to public health: cuts to prevention, research, programs. *The Nation's Health*, May 2017, 47(3):1–18. Available at: http://thenationshealth.aphapublications.org/content/47/3/1.4) (accessed 20 October 2020).

Krogstad JM, Passel JS, Cohn D (2018). 5 facts about illegal immigration in the US. Available at: http://www.pewresearch.org/fact-tank/2017/04/27/5-facts-about-illegal-immigration-in-the-u-s/ (accessed 15 February 2019).

Krueger P, Tajudaullah B, Rosenau PV (2009). Health lifestyles in the United States and Canada: are we really so different? *Social Science Quarterly*, 90(5):1380–1402.

Kruse J (2013). Income ratio and medical student specialty choice: the primary importance of the ratio of mean primary care physician income to mean consulting specialist income. *Family Medicine*, 45(4):281–3.

Kutney-Lee A, Kelly D (2011). The effect of hospital electronic health record adoption on nurse-assessed quality of care and patient safety. *Journal of Nursing Administration*, 41(11):466–72.

Lagu T, Griffin C, Lindenauer PK (2015). Ensuring access to health care for patients with disabilities. *JAMA Internal Medicine*, 175(2):157. Available at: https://doi.org/10.1001/jamainternmed.2014.6740) (accessed 20 October 2020).

Lagu T, Iezzoni LI, Lindenauer PK (2014). The axes of access — improving care for patients with disabilities. *New England Journal of Medicine*, 370(19):1847–51. Available at: https://www.nejm.org/doi/10.1056/NEJMsb1315940 (accessed 20 October 2020).

Lagu T et al. (2013). Access to subspecialty care for patients with mobility impairment. *Annals of Internal Medicine*, 158(6):441. Available at: https://doi.org/10.7326/0003-4819-158-6-201303190-00003) (accessed 20 October 2020).

Lam MB, Figueroa JF, Feyman Y, Reimold KE, Orav EJ, Jha AK (2018). Association between patient outcomes and accreditation in US hospitals: observational study. *BMJ (Clinical Research Ed.)*, 363, k4011.

Landers S, Madigan E, Leff B, Rosati RJ, McCann BA, Hornbake R et al. (2016). The future of home health care: a strategic framework for optimizing value. *Home Health Care Management and Practice*, 28(4):262–78.
Law SA (1974). Blue Cross: what went wrong? New Haven, CT: Yale University Press.
Lawes S, Grissinger M (2017). Medication errors attributed to health information technology. *Pennsylvania Patient Safety Advisory*, 14(1):1–8.
Lazar M, Davenport L (2018). Barriers to health care access for low income families: a review of literature. *Journal of Community Health Nursing*, 35(1):28–37.
Le ST, Hsia R (2016). Community characteristics associated with where urgent care centers are located: a cross-sectional analysis. *BMJ Open*, 2016;6:e010663.
Lebrun-Harris LA, Shi L, Zhu J, Burke MT, Sripipatana A, Ngo-Metzger Q (2013). Effects of patient-centered medical home attributes on patients' perceptions of quality in federally supported health centers. *Annals of Family Medicine*, 11(6):508–16.
Lee M, Lee H, Kim Y, Kim J, Cho M, Jang J et al. (2018). Mobile app-based health promotion programs: a systematic review of the literature. *International Journal of Environmental Research and Public Health*, 15(12).
Lesniewski N, Ackley K (2018). IRS ruling on political donation reporting sets off campaign finance fight. *Roll Call*, 17 July 2018. Available at: https://www.rollcall.com/news/politics/mcconnell-cheers-new-irs-limits-political-donation-reporting (accessed 15 February 2019).
Leszinsky L, Candon M (2019). Primary care appointments for Medicaid beneficiaries with advanced practitioners. *Annals of Family Medicine*, 17(4):363–6.
Levey NN (2019). Skimpy health plans touted by Trump bring back familiar woes for consumers. *Los Angeles Times*, 2 April 2019. Available at: https://www.latimes.com/politics/la-na-pol-trump-shortterm-health-insurance-consumer-problems-20190402-story.html (accessed 3 April 2019).
Levinson DR (2011). Review of the Food and Drug Administration's monitoring of imported food recalls. In HHS Office of Inspector General (ed.), Washington, DC, Office of Inspector General: 11. Available at: http://oig.hhs.gov/oas/reports/region10/10901500.pdf (accessed 1 July 2020).
Lewin-VHI (1994). Subacute care: review of the literature. Report for the US DHHS by Lewin-VHI Inc. Available at: http://aspe.hhs.gov/daltcp/reports/scltrves.pdf (accessed 1 July 2020).
Lieberman T, Peppe E, Lundy J (2005). A consumer guide to handling disputes with your employer or private health plan; 2005 update. Kaiser Family Foundation and Consumers Union. Available at: https://www.kff.org/health-costs/report/a-consumer-guide-to-handling-disputes-with-your-employer-or-private-health-plan/ (accessed 1 July 2020).
Lindblom CE (1959). The science of 'muddling through'. *Public Administration Review*, 19(2):79–88.
Linehan K (2010). Self-insurance and the potential effects of health reform on the small-group market. National Health Policy Forum, Issue Brief, no. 840. Washington DC: George Washington University. Available at: http://www.nhpf.org/library/issue-briefs/IB840_PPACASmallGroup_12-21-10.pdf (accessed 1 July 2020).
Ling DC, Berndt ER, Frank RG (2008). Economic incentives and contracts: the use of psychotropic medications. *Contemporary Economic Policy*, 26(1):49–72.
Liptak A (2011). Supreme court to hear case challenging health law. *New York Times*, 15 November 2011. Available at: http://www.nytimes.com/2011/11/15/us/supreme-court-to-hear-case-challenging-health-law.html?pagewanted=all (accessed 1 July 2020).
Liu LM (2014). Deprescribing: an approach to reducing polypharmacy in nursing home residents. *Journal for Nurse Practitioners*, 10(2):136–9.
Llovera I, Loscalzo K, Gao J, Li T, Brave M, Becker L et al. (2019). Increased access to urgent care centers decreases low acuity diagnoses in a nearby hospital emergency department. *American Journal of Emergency Medicine*, 37(3):486–8.

Lo Sasso AT, Shah M, Frogner BK (2010). Health savings accounts and health care spending. *Health Services Research*, 45(4):1041–60.

Localio AR et al. (1991). Relation between malpractice claims and adverse events due to negligence: results of the Harvard Medical Practice Study III. *New England Journal of Medicine*, 325:245–51.

Love JS et al. (2012). Are physicians' perceptions of healthcare quality and practice satisfaction affected by errors associated with electronic health record use? *Journal of the American Medical Informatics Association*, 19(4):610–14.

Lovenheim MF, Steefel DP (2011). Do blue laws save lives? The effect of Sunday alcohol sales bans on fatal vehicle accidents. *Journal of Policy Analysis and Management*, 30(4):798–820. Available at: http://www.jstor.org/stable/23019005 (accessed 6 January 2019).

Luo M (2011). Sway of NRA stymies firearms research, scientists say. *New York Times*, 25 January 2011. Available at: http://www.nytimes.com/2011/01/26/us/26guns.html?pagewanted=all (accessed 1 July 2020).

Lutfiyya MN, Gessert CE, Lipsky MS (2013). Nursing home quality: a comparative analysis using CMS Nursing Home Compare data to examine differences between rural and nonrural facilities. *Journal of the American Medical Directors Association*, 14(8):593–8.

Lutterman T, Shaw R, Fisher W, Manderscheid R (2017). Trend in Psychiatric Inpatient Capacity, United States and Each State, 1970 to 2014. National Association of State Mental Health Program Directors, August 2017. Available at: https://www.nri-inc.org/media/1319/tac-paper-10-psychiatric-inpatient-capacity-final-09-05-2017.pdf) (accessed 20 October 2020).

Lynch JW et al. (1998). Income inequality and mortality in metropolitan areas of the United States. *American Journal of Public Health*, 88(7):1074–80.

Lynch S (2012). Hospice and palliative care access issues in rural areas. *American Journal of Hospice and Palliative Medicine*, 30(2):172–7.

Lyon SM, Benson NM, Cooke CR, Iwashyna TJ, Ratcliffe SJ, Kahn JM et al. (2011). The effect of insurance status on mortality and procedural use in critically ill patients. *American Journal of Respiratory and Critical Care Medicine*, 184(7):809–15.

McCarthy D et al. (2009). Aiming higher: results from a state scorecard on health system performance. New York: Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/fund-reports/2009/oct/aiming-higher-results-state-scorecard-health-system-performance (accessed 20 October 2020).

McCarty KL et al. (2009). Major components and themes of local public health laws in select US jurisdictions. *Public Health Reports*, 124:458–62.

McCarty N, Poole KT, Rosenthal H (2008). Polarized America. Cambridge, MA: MIT Press. Online updates available at: http://voteview.com/Polarized_America.htm#POLITICALPOLARIZATION) (accessed 20 October 2020).

MacDorman MF, Mathews TJ (2010). Behind international rankings of infant mortality: how the United States compares with Europe. *International Journal of Health Services*, 40:577–88.

McHugh MD et al. (2011). Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. *Health Affairs*, 30(2):202–9.

McLaren JL, Lichtenstein JD (2018). The pursuit of the magic pill: the overuse of psychotropic medications in children with intellectual and developmental disabilities in the USA. *Epidemiology and Psychiatric Sciences*, 1–4.

McMenamin SB et al (2010). Adoption of policies to treat tobacco dependence in U.S. medical groups. *American Journal of Preventive Medicine*, 39(5):449–56.

McMillan SS, Kendall E, Sav A, King MA, Whitty JA, Kelly F et al. (2013). Patient-centered approaches to health care: a systematic review of randomized controlled trials. *Medical Care Research and Review*, 70(6):567–96.

McNamara P (2006). Foreword: payment matters? The next chapter. *Medical Care Research and Review*, 63:5S–10S.
McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL (2016). Early performance of accountable care organizations in Medicare. *New England Journal of Medicine*, 374(24):2357–66. Available at: https://doi.org/10.1056/NEJMsa1600142) (accessed 20 October 2020).
Mackey TK, Liang BA (2012). Rebalancing brain drain: exploring resource reallocation to address health worker migration and promote global health. *Health Policy*, 107:66–73.
MACPAC (2011). Report to Congress: Medicaid and CHIP. Medicaid and CHIP Payment and Access Commission. Available at: http://healthreform.kff.org/~/media/Files/KHS/docfinder/MACPAC_March2011_web.pdf (accessed 1 July 2020).
MACPAC (2017a). Mandatory and optional enrollees and services in Medicaid. Medicaid and CHIP Payment and Access Commission. Available at: https://www.macpac.gov/wp-content/uploads/2017/06/Mandatory-and-Optional-Enrollees-and-Services-in-Medicaid.pdf (accessed 12 January 2019).
MACPAC (2017b). Medicaid's share of state budgets. Medicaid and CHIP Payment and Access Commission. Available at: https://www.macpac.gov/subtopic/medicaids-share-of-state-budgets/ (accessed 12 January 2019).
MACPAC (2019). Physician acceptance of new Medicaid patients. Available at: https://www.macpac.gov/wp-content/uploads/2019/01/Physician-Acceptance-of-New-Medicaid-Patients.pdf (accessed 5 April 2019).
MACPAC (2020). Medicaid managed care payment. Medicaid and CHIP Payment and Access Commission. Available at: https://www.macpac.gov/subtopic/medicaid-managed-care-payment/).
Magrini N (2007). Direct to consumer advertising in Europe. *BMJ*, 335:526.
Makaroun LK, Bowman C, Duan K, Handley N, Wheeler DJ, Pierluissi E et al. (2017). Specialty care access in the safety net – the role of public hospitals and health systems. *Journal of Health Care for the Poor and Underserved*, 28(1):566–81.
Makary MA, Daniel M (2016). Medical error – the third leading cause of death in the US. *BMJ*, i2139. Available at: https://doi.org/10.1136/bmj.i2139 (accessed 20 October 2020).
Marcus AD (2006). Advocacy overload? Activists seek to unify efforts of groups targeting diseases; a brain-tumor collaborative. *Wall Street Journal*, 10 October 2006.
Marcus S, Olfson M (2010). National trends in the treatment for depression from 1998 to 2007. *Archives of General Psychiatry*, 67(12):1265–73.
Mark TL, Yee T, Levit KR, Camacho-Cook J, Cutler E, Carroll CD (2016). Insurance financing increased for mental health conditions but not for substance use disorders, 1986–2014. *Health Affairs*, 35(6):958–65.
Marmor TR (2000). *The politics of Medicare*. Hawthorne, NY: Aldine De Gruyter.
Marmot MG, Bell R (2009). Action on health disparities in the United States: commission on social determinants of health. *JAMA,* 301(11):1169–71.
Marsh B et al. (2012a). A new guide to the democratic herd. *New York Times*, 30 August 2012. Available at: http://www.nytimes.com/interactive/2012/09/02/sunday-review/a-new-guide-to-the-democratic-herd.html?_r=0 (accessed 1 July 2020).
Marsh B et al. (2012b). A new guide to the republican herd. *New York Times*, 26 August 2012. Available at: http://www.nytimes.com/interactive/2012/08/26/sunday-review/a-new-guide-to-the-republican-herd.html (accessed 1 July 2020).
Marshall D, Pyron T, Jimenez J, Coffman J, Pearsol J, Koester D (2014). Improving public health through state health improvement planning. *Journal of Public Health Management and Practice*, 20(1):23–8. Available at: https://doi.org/10.1097/PHH.0b013e3182a5a4b8 (accessed 20 October 2020).
Marshall M, Cornwell J, Collins A (2018). Rethinking medicine. *British Medical Journal*, 363:k4987.

Martin AB et al. (2018). National health care spending in 2017: growth slows to post–great recession rates; share of GDP stabilizes. *Health Affairs*, 38(1). Available at: https://doi.org/10.1377/hlthaff.2018.05085 (accessed 20 October 2020).

Martin CB, Hales CM, Gu G, Ogden CL (2020) Prescription drug use in the United States, 2015–2016. National Center for Health Statistics NCHS Data Brief no. 334, May 2019. Available at: https://www.cdc.gov/nchs/products/databriefs/db334.htm (accessed 27 June 2020).

Mas N (2013). Responding to financial pressures: the effect of managed care on hospitals' provision of charity care. *International Journal of Health Care Finance and Economics*, 13(2):95–114.

Mascaro L, Lucey C (2019). McConnell shuts door on Trump health push. Available at: https://www.apnews.com/6a130892b5e44d2890ece12dd30f4c4d (accessed 30 May 2019).

Matula S et al. (2009). Operation access: a proven model for providing volunteer surgical services to the uninsured in the United States. *Journal of the American College of Surgeons*, 209(6):769–76.

Maxey HL, Norwood CW, Vaughn SX, Marsh S, Wang Y, Williams J (2018). Dental safety net capacity: an innovative use of existing data to measure dentists' clinical engagement in state Medicaid programs. *Journal of Public Health Dentistry*, 78(3):266–74.

Meddings JA, McMahon LF (2008). Measuring quality in Pay-for-Performance programs: from 'one-size-fits-all' measures to individual patient risk-reduction scores. *Disease Management Health Outcomes*, 16(4):205–16.

MedlinePlus. (2018). What is palliative care? Available at: https://medlineplus.gov/ency/patientinstructions/000536.htm (accessed 20 October 2020).

MedPAC (2008a). Part D payment system. Medicare Payment Advisory Commission. Available at: http://www.medpac.gov/docs/default-source/payment-basics/part-d-payment-system-15.pdf?sfvrsn=0 (accessed 1 July 2020).

MedPAC (2008b). Long-term care hospital payment system. Medicare Payment Advisory Commission. Available at: http://www.medpac.gov/docs/default-source/payment-basics/medpac_payment_basics_19_ltch_final_v2_sec.pdf?sfvrsn=0 (accessed 1 May 2020).

MedPAC (2011). Report to Congress: Medicare Payment Policy, March. Medicare Payment Advisory Commission. Available at: http://medpac.gov/docs/default-source/reports/Mar11_EntireReport.pdf (accessed 20 October 2020).

MedPAC (2016). Report to Congress: Medicare Payment Policy, March. Medicare Payment Advisory Commission. Available at: http://www.medpac.gov/docs/default-source/reports/chapter-4-physician-and-other-health-professional-services-march-2016-report-.pdf?sfvrsn=0 (accessed 8 January 2019).

MedPAC (2018a). Medicare payment policy. Medicare Payment Advisory Commission. Available at: http://www.medpac.gov/docs/default-source/reports/mar18_medpac_entirereport_sec.pdf?sfvrsn=0 (accessed 23 May 2018).

MedPAC (2018b). Report to Congress: Medicare and the health care delivery system. Available at: http://medpac.gov/docs/default-source/reports/jun18_medpacreporttocongress_sec.pdf (accessed 30 May 2019).

Mello MM, Kachalia A, Studdert DM (2011). Administrative compensation for medical injuries: lessons from three foreign systems. Commonwealth Fund. Available at: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_issue_brief_2011_jul_1517_mello_admin_compensation_med_injuries.pdf (accessed 6 January 2019).

Mello MM et al. (2010). National costs of the medical liability system. *Health Affairs*, 29(9):1569–77.

Mendelson A, Kondo K, Damberg C et al. (2017). The effects of Pay-for-Performance programs on health, health care use, and processes of care. *Annals of Internal Medicine*, 166(5):341. Available at: https://www.acpjournals.org/doi/10.7326/M16-1881 (accessed 20 October 2020).

Mercer M (2013). The Affordable Care Act's insurance marketplace opens for business. *AARP Bulletin*, December 2013. Available at: https://www.aarp.org/health/health-insurance/info-10-2013/health-insurance-marketplace.html (accessed 1 July 2020).

Metz AM (2017). Medical school outcomes, primary care specialty choice, and practice in medically underserved areas by physician alumni of MEDPREP, a postbaccalaureate premedical program for underrepresented and disadvantaged students. *Teaching and Learning in Medicine*, 29(3):351–9.

Miller AM, Swartwout KD, Schoeny ME, Vail M, McClenton R (2019). Care coordination to target patient complexity and reduce disparities in primary care. *Public Health Nursing*, 20 March, 1–10.

Miller ME (2007). Private fee-for-service plans in Medicare Advantage. Medicare Payment Advisory Commission. Testimony before the Subcommittee on Health, Committee on Ways and Means, US House of Representatives, 22 May 2007. Available at: http://67.59.137.244/documents/052207_Testimony_WM_MedPAC_MA_PFFS.pdf (accessed 1 July 2020).

Miller S, Wherry LR (2017). Health and access to care during the first 2 years of the ACA Medicaid expansions. *New England Journal of Medicine*, 376:947–56.

Miller & Zois (2020). Malpractice damage caps in all 50 states: 2020 update. Available at: https://www.millerandzois.com/malpractice-damage-caps.html (accessed 22 June 2020).

Mills A, Engelhard CL, Tereskerz PM (2010). Truth and consequences – insurance-premium rate regulation and the ACA. *New England Journal of Medicine*, 353(10):899–901.

Minemyer P (2019). Verma: Trump Administration mulling mandatory payment models. Available at: https://www.fiercehealthcare.com/payer/verma-trump-administration-mulling-mandatory-payment-models (accessed 20 October 2020).

Miranda AC, Serag-Bolos ES, Cooper JB (2019). Cost-related medication underuse: strategies to improve medication adherence at care transitions. *American Journal of Health-System Pharmacy*, 76(8):560–5.

Mitchell A (2018). Medicaid's federal medical assistance percentage (FMAP). Available at: https://fas.org/sgp/crs/misc/R43847.pdf) (accessed 20 October 2020).

Morgan KJ, Campbell AL (2011). Delegated governance in the Affordable Care Act. *Journal of Health Politics, Policy and Law*, 36(3):387–91.

Morgan SG, Lee A (2017). Cost-related non-adherence to prescribed medicines among older adults: a cross-sectional analysis of a survey in 11 developed countries. *BMJ Open*, 7:e014287.

Morley C, Unwin M, Peterson GM, Stankovich J, Kinsman L (2018). Emergency department crowding: a systematic review of causes, consequences and solutions. *PLoS ONE*, 13(8):1–42.

Morrisey M (2006). Not-for-profit survival in a competitive world. *Frontiers of Health Services Management*, 22(4):35–8.

Mortensen K (2014). Access to primary and specialty care and emergency department utilization of Medicaid enrollees needing specialty care. *Journal of Health Care for the Poor and Underserved*, 25(2):801–13.

Mossialos E, Wenzl M, Osborn R, Sarnak D eds. (2015). International profiles of health care systems. New York: Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/fund-reports/2017/may/international-profiles-health-care-systems).

Mpofu C, Gupta T, Hays R (2016). The ethics of medical practitioner migration from low-resourced countries to the developed world: a call for action by health systems and individual doctors. *Journal of Bioethical Inquiry*, 13(3):395–406.

Muennig PA, Glied SA (2010). What changes in survival rates tell us about US health care. *Health Affairs*, 29(11):2105–13.

Muhlestein D, McClellan MB (2016). Accountable care organizations in 2016: private and public-sector growth and dispersion. *Health Affairs* blog, 21 April 2016. Available at: https://www.healthaffairs.org/do/10.1377/hblog20160421.054564/full/ (accessed 20 October 2020).

Muhlestein D, Saunders R, McClellan M (2017). Growth of ACOs and alternative payment models in 2017. Available at: https://www.healthaffairs.org/do/10.1377/hblog20170628.060719/full/ (accessed 20 October 2020).

Muhlestein D, Saunders R, Richards R, McClellan M (2018). Recent progress in the value journey: growth of ACOs and value-based payment models in 2018. *Health Affairs* blog, 14 August 2018. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180810.481968/full/ (accessed 20 October 2020).

Mulcahy AW, Gracner T, Finegold K (2018). Associations between the Patient Protection and Affordable Care Act Medicaid primary care payment increase and physician participation in Medicaid. *JAMA Internal Medicine*, 178(8):1042. Available at: https://doi.org/10.1001/jamainternmed.2018.2610 (accessed 20 October 2020).

Munnich EL, Parente ST (2014). Procedures take less time at ambulatory surgery centers, keeping costs down and ability to meet demand up. *Health Affairs*, 33(5):764–9.

Murphy PA (2017). From mental illness to mental health: improving access to care. *Journal of Midwifery and Women's Health*, 62(6):655–6.

Murray S, O'Connor P (2013). New Congress face same partisan divisions. *Wall Street Journal*, 3 January 2013. Available at: https://www.wsj.com/articles/SB10001424127887324374004578219741894631734 (accessed 1 July 2020).

Musumeci MB (2012). Implementing the ACA's Medicaid-related health reform provisions after the Supreme Court's decision. Kaiser Family Foundation, August Available at: http://www.kff.org/healthreform/upload/8348.pdf (accessed 1 July 2020).

Musumeci MB (2020). Explaining Texas v. US: a guide to the case challenging the ACA. 10 March. Kaiser Family Foundation. Available at: https://www.kff.org/health-reform/issue-brief/explaining-texas-v-u-s-a-guide-to-the-case-challenging-the-aca/ (accessed 27 June 2020).

Musumeci M, Rudowitz R, Hinton E, Antonisse L, Hall C (2018). Section 1115 Medicaid demonstration waivers: the current landscape of approved and pending waivers. Kaiser Family Foundation. Available at: http://files.kff.org/attachment/Issue-Brief-Section-1115-Medicaid-Demonstration-Waivers-The-Current-Landscape-of-Approved-and-Pending-Waivers (accessed 7 January 2019).

Naavaal S, Barker LK, Griffin SO (2017). The effect of health and dental insurance on US children's dental care utilization for urgent and non-urgent dental problems, 2008. *Journal of Public Health Dentistry*, 77(1):54–62.

NACHC (2016). Staffing the safety net: building the primary care workforce at America's health centers. National Association of Community Health Centers. Available at: http://www.nachc.org/wp-content/uploads/2015/10/NACHC_Workforce_Report_2016.pdf (accessed 20 October 2020).

NACHC (2019). Community Health Center Chart book 2019. Fig. 5-3. January 2019. National Association of Community Health Centers. Available at: http://www.nachc.org/wp-content/uploads/2019/01/Community-Health-Center-Chartbook-FINAL-1.28.19.pdf (accessed 20 October 2020).

NAHC (2010). Home care and hospice facts and stats. National Association for Home Care and Hospice. Available at: http://www.nahc.org/advocacy-policy/home-care-hospice-facts-stats/ (accessed 1 July 2020).

NAMCS (2016). National Ambulatory Medical Care Survey: 2016 National Summary Tables. Table 1. Available at: https://www.cdc.gov/nchs/ahcd/index.htm (accessed 20 October 2020).

NASHP (2020). A snapshot of state proposals to implement Medicaid work requirements nationwide. National Academy for State Health Policy. Available at: https://www.nashp.org/state-proposals-for-medicaid-work-and-community-engagement-requirements/ (accessed 20 October 2020).
Nasseh K, Vujicic M (2014). The effect of growing income disparities on US adults' dental care utilization. *Journal of the American Dental Association (JADA)*, 145(5):435–42.
National Care Planning Council (2012). About Medicaid long term care. Available at: http://www.longtermcarelink.net/eldercare/medicaid_long_term_care.htm (accessed 1 July 2020).
Naylor MD, Aiken LH, Kurtzman ET, Olds DM, Hirschman KB (2011). The importance of transitional care in achieving health reform. *Health Affairs*, 30(4):746–54.
NCAL (2018). Assisted living: a growing aspect of long term care. National Center for Assisted Living. Available at: https://www.ahcancal.org/Assisted-Living/Facts-and-Figures/Pages/default.aspx (accessed 20 October 2020).
NCCPA (2018). 2018 Statistical Profile of Certified Physician Assistants Annual Report. National Commission on Certification of Physician Assistants. Available at: https://prodcmsstoragesa.blob.core.windows.net/uploads/files/2018StatisticalProfileofCertifiedPhysicianAssistants.pdf (accessed 20 October 2020).
NCEH (2019). National Center for Environmental Health. Available at: https://www.cdc.gov/nceh/) (accessed 20 October 2020).
NCHS (2000). Health, United States, 2000. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHS (2010). Health, United States, 2010. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHS (2014). Health, United States, 2014. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHS (2015). Health, United States, 2015. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHS (2016). Health, United States, 2016. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services. Table 077.
NCHS (2017). Health, United States, 2017. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHS (2019). Health, United States, 2019. National Center for Health Statistics, Centers for Disease Control and Prevention, US Department of Health and Human Services.
NCHWA (2017). Supply and demand projections of the nursing workforce: 2014–2030. National Center for Health Workforce Analysis, Bureau of Health Workforce, Health Resources and Services Administration, US Department of Health and Human Services. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/projections/NCHWA_HRSA_Nursing_Report.pdf) (accessed 20 October 2020).
NCMDI (2017). The psychiatric shortage: causes and solutions. National Council Medical Director Institute, 28 March 2017. Available at: https://www.thenationalcouncil.org/wp-content/uploads/2017/03/Psychiatric-Shortage_National-Council-.pdf (accessed 20 October 2020).
NCSL (2014a). Dental health professional shortage areas. National Conference of State Legislatures, podcast 5/9/2014. Available at: http://www.ncsl.org/research/health/dental-health-professional-shortage-areas.aspx) (accessed 20 October 2020).
NCSL (2014b). Medical malpractice reform – health cost containment. National Conference of State Legislators. Available at: http://www.ncsl.org/research/health/medical-malpractice-reform-health-cost-brief.aspx (accessed 7 January 2019).
NCSL (2016). State approval of health insurance rate increases. National Conference of State Legislators. Available at: http://www.ncsl.org/research/health/health-insurance-rate-approval-disapproval.aspx (accessed 24 January 2019).

NCSL (2018a). CON-certificate of need laws. National Conference of State Legislators. Available at: http://www.ncsl.org/research/health/con-certificate-of-need-state-laws.aspx (accessed 7 January 2019).

NCSL (2018b). State medical marijuana laws. National Conference of State Legislators. Available at: http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx (accessed 7 January 2019).

NEHRS (2015). National Electronic Health Records Survey: 2015 state and national electronic health record adoption summary tables. Available at: https://www.cdc.gov/nchs/data/ahcd/nehrs/2015_nehrs_web_table.pdf) (accessed 20 October 2020).

Nei D, Anderson Snyder L, Litwiller BJ (2015). Promoting retention of nurses: a meta-analytic examination of causes of nurse turnover. *Health Care Management Review*, 40(3):237–53.

NEJM (2004). Physician compensation models: the basics, the pros, and the cons. *New England Journal of Medicine*. Available at: http://www.nejmcareercenter.org/article/2184/physician-compensation-models-the-basics-the-pros-and-the-cons/ (accessed 1 July 2020).

NEJM Catalyst (2018). What is Pay for Performance in healthcare? *New England Journal of Medicine*. Available at: https://catalyst.nejm.org/pay-for-performance-in-healthcare/ (accessed 25 January 2019).

Neprash HT, Zink A, Gray J, Hempstead K (2018). Physicians' participation in Medicaid increased only slightly following expansion. *Health Affairs*, 37(7):1087–91. Available at: https://doi.org/10.1377/hlthaff.2017.1085 (accessed 20 October 2020).

Neuhausen K, Davis AC, Needleman J, Brook RH, Zingmond D, Roby DH (2014). Disproportionate-share hospital payment reductions may threaten the financial stability of safety-net hospitals. *Health Affairs*, 33(6):988–96.

Neumann PJ, Weinstein MC (2010). Legislating against use of cost–effectiveness information. *New England Journal of Medicine*, 363(16):1495–6.

Neustadt R (1991). Presidential power and the modern presidents. New York: Free Press, rev. edn.

New York State Department of Health (2018). State innovation models (SIM). Available at: https://www.health.ny.gov/technology/innovation_plan_initiative/sim.htm (accessed 7 January 2019).

Newport F, Saad L (2011). Gallup review: public opinion context of Tucson shootings. Phone survey, 10 January 2011. Available at: http://www.gallup.com/poll/145526/gallup-review-public-opinion-context-tucson-shootings.aspx?version=print (accessed 1 July 2020).

Ng DK, Brotman DJ, Lau B, Young JH (2012). Insurance status, not race, is associated with mortality after an acute cardiovascular event in Maryland. *Journal of General Internal Medicine*, 27(10):1368–76.

Ng T, Harrington C, Kitchener M (2010). Medicare and Medicaid in long-term care. *Health Affairs*, 29(1):22–8.

NHPCO (2018). NHPCO facts and figures, 2018 edition. National Hospice and Palliative Care Organization. Available at: https://www.nhpco.org/wp-content/uploads/2019/07/2018_NHPCO_Facts_Figures.pdf (accessed 20 October 2020).

NIDCR (2019). 2020 Surgeon General's Report on Oral Health. National Institute of Dental and Craniofacial Research, August 2019. Available at: https://www.nidcr.nih.gov/news-events/2020-surgeon-generals-report-oral-health) (accessed 20 October 2020).

Nikpay SS, Ayanian JZ (2015). Hospital charity care – effects of new community-benefit requirements. *New England Journal of Medicine*, 373(18):1687–90.

NIOSH (2018). The National Institute for Occupational Safety and Health. Website. Available at: https://www.cdc.gov/niosh/) (accessed 20 October 2020).

Nolte E, McKee M (2004). Does healthcare save lives? Avoidable mortality revisited. London: The Nuffield Trust.

Nolte E, McKee CM (2008). Measuring the health of nations: updating an earlier analysis. *Health Affairs*, 27(1):58–71.
Nolte E, McKee M (2011). Variations in amenable mortality – trends in 16 high-income nations. *Health Policy*, 103:47–52.
Norris L (2018). Billions in ACA rebates show 80/20 rule's impact. Available at: https://www.healthinsurance.org/obamacare/billions-in-aca-rebates-show-80-20-rules-impact/ (accessed 3 April 2019).
Norris L (2019). Politics and practicality influence state decisions on control, implementation of health insurance exchanges. Available at: https://www.healthinsurance.org/state-health-insurance-exchanges/ (accessed 4 April 2019).
Nourazari S, Hoch DB, Capawanna S, Sipahi R, Benneyan JC (2016). Can improved specialty access moderate emergency department overuse?: effect of neurology appointment delays on ED visits. *Neurology. Clinical Practice*, 6(6):498–505.
NPC (2018). Accountable care organizations. National Pharmaceutical Council. Available at: https://www.npcnow.org/taxonomy/term/2?page=3 (accessed 30 May 2019).
Nugent GN et al. (2004). Value for taxpayers' dollars: what VA care would cost at Medicare prices. *Medical Care Research and Review*, 61(4):495–508.
Nurse Journal (2019). Advance Practice Nurse Fact Sheet. *Nurse Journal* webpage. Available at: https://nursejournal.org/advanced-practice/advanced-practice-nursing-fact-sheet/) (accessed 20 October 2020).
Nursing Solutions (2018). 2018 national health care retention & RN staffing report. Available at: https://bishopkingdom.com/wp-content/uploads/2019/02/Nuj30XwlNRFGf8Gk7v3U.pdf (accessed 20 October 2020).
O'Malley A, Sarwar R, Keith R, Balke P, Ma S, McCall N et al. (2017). Provider experiences with chronic care management (CCM) services and fees: a qualitative research study. *JGIM: Journal of General Internal Medicine*, 32(12):1294–1300.
O'Neill P, Sussex J (2014). International comparison of medicines usage: quantitative analysis. Office for Health Economics, Association of the British Pharmaceutical Industry. Available at: https://www.lif.se/contentassets/a0030c971ca6400e9fbf09a61235263f/international-comparison-of-medicines-usage-quantitative-analysis.pdf) (accessed 20 October 2020).
O'Quinn R, Bronson A, Greenfield M (2018). Healthcare fraud enforcement trends under the Trump administration. Available at: https://www.americanbar.org/groups/gpsolo/publications/gpsolo_ereport/2018/july-2018/healthcare-fraud-enforcement-trends-trump-administration/ (accessed 4 April 2019).
Oberlander J (2003). The political life of Medicare. Chicago, IL: University of Chicago Press.
Oberlander J (2006). Health reform interrupted: the unravelling of the Oregon health plan. *Health Affairs*, 19 December 2006.
Oberlander J (2011). Throwing darts: Americans' elusive search for health care cost control. *Journal of Health Politics, Policy and Law*, 36(3):477–84.
Oberlander J (2012). The future of Obamacare. *New England Journal of Medicine*, 367(23):2165–7.
OECD (2017). Health at a glance. Available at: http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm (accessed 29 March 2019).
OECD (2018a). Health statistics (2018). Available at: http://www.oecd.org/els/health-systems/health-data.htm (accessed 29 March 2019).
OECD (2018b). Key ICT indicators. Available at: http://www.oecd.org/sti/broadband/oecdkeyictindicators.htm (accessed 20 October 2020).
OECD (2019). Health statistics. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=SHA (accessed 20 October 2020).
OECD (2020). StatExtracts. Available at: http://www.oecd.org/els/health-systems/health-data.htm (accessed 20 October 2020).

Office of Disease Prevention and Health Promotion (2019). Disparities details by age group for 2013–2016. HealthPeople.gov. Available at: https://www.healthypeople.gov/2020/data/disparities/detail/Chart/4123/4/2016 (accessed 29 March 2019).

Office for National Coordinator of HIT (2015). Trends in consumer access and use of electronic health information. Health IT Dashboard Data Brief, 30 October 2015. Available at: https://dashboard.healthit.gov/evaluations/data-briefs/trends-consumer-access-use-electronic-health-information.php (accessed 20 October 2020).

Office for National Coordinator of HIT (2017). Hospital progress to meaningful use. Health IT Dashboard. Available at: https://dashboard.healthit.gov/evaluations/data-briefs/trends-consumer-access-use-electronic-health-information.php (accessed 20 October 2020).

OHRP (2011). Regulations. Office for Human Research Protections. Available at: https://www.hhs.gov/ohrp/regulations-and-policy/index.html (accessed 1 July 2020).

Okeke EN (2013). Brain drain: do economic conditions 'push' doctors out of developing countries? *Social Science and Medicine*, 98:169–78.

Okeke EN (2014). Do higher salaries lower physician migration? *Health Policy and Planning*, 29(5):603–14.

Oktora MP, Denig P, Bos JHJ, Schuiling-Veninga CCM, Hak E (2019). Trends in polypharmacy and dispensed drugs among adults in the Netherlands as compared to the United States. *PLoS ONE*, 14(3):1–15.

Oliver A (2007). The Veterans Health Administration: an American success story? *Milbank Quarterly*, 85(1):5–35.

OMB (2018). Historical tables: Table 4.2. Office of Management and Budget. Available at: https://obamawhitehouse.archives.gov/omb/budget/Historicals/ (accessed 7 January 2019).

Ortíz-Barrios LB, Granados-García V, Cruz-Hervert P, Moreno-Tamayo K, Heredia-Ponce E, Sánchez-García S (2019). The impact of poor oral health on the oral health-related quality of life (OHRQoL) in older adults: the oral health status through a latent class analysis. *BMC Oral Health*, 19(1):141.

Osborn R, Moulds D, Schneider EC et al. (2015). Primary care physicians in ten countries report challenges caring for patients with complex health needs. *Health Affairs* 34(12):2104–12.

OSHA (nd) Occupational Safety and Health Administration website. Available at: https://www.osha.gov/ (accessed 20 October 2020).

Paasche-Orlow MK et al. (2009). National survey of Patients' Bill of Rights statutes. *Journal of General Internal Medicine*, 24(4):489–94.

Paez KA, Zhao L, Hwang W (2009). Rising out-of-pocket spending for chronic conditions: a ten-year trend. *Health Affairs*, 28(1):15–25.

Page BI, Jacobs JR (2009). Class war? What Americans really think about economic inequality. Chicago, IL: University of Chicago Press.

Paik M, Black B, Hyman DA (2013). The receding tide of medical malpractice litigation: part 1 – national trends. *Journal of Empirical Legal Studies*, 10(4):612–38. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/jels.12021 (accessed 20 October 2020).

Palms DL, Hicks LA, Bartoces M, Hersh AL, Zetts R, Hyun DY et al. (2018). Comparison of antibiotic prescribing in retail clinics, urgent care centers, emergency departments, and traditional ambulatory care settings in the United States. *JAMA Internal Medicine*, 178(9):1267–9.

Papadakos PJ (2014). Electronic distractions of the respiratory therapist and their impact on patient safety. *Respiratory care*, respcare-03483.

Papanicolas I et al. (2018). Health care spending in the United States and other high-income countries. *JAMA*, 319(10):1024–39.

Parekh A, Hoagland GW (2017). Medical liability reform in a new political environment. *JAMA*, 317(13):1311. Available at: https://doi.org/10.1001/jama.2017.1405) (accessed 20 October 2020).

Parlier AB, Galvin SL, Thach S, Kruidenier D, Fagan EB (2018). The road to rural primary care: a narrative review of factors that help develop, recruit, and retain rural primary care physicians. *Academic Medicine: Journal of the Association of American Medical Colleges*, 93(1):130–40.

Parmet WE (2018). Immigration and health care under the Trump administration. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180105.259433/full/ (accessed 4 April 2019).

Patrick SW, Fry CE, Jones TF, Buntin MB (2016). Implementation of prescription drug monitoring programs associated with reductions in opioid-related death rates. *Health Affairs*, 35(7):1324–32.

Payne TH (2015). Electronic health records and patient safety: should we be discouraged? *BMJ Quality and Safety*, 24:239–40.

PCPCC (2019). Primary care innovations and PCMH map by state. Patient-Centered Primary Care Collaborative. Available at: https://www.pcpcc.org/initiatives/state (accessed 20 October 2020).

Pear R (2011). Health care law will let states tailor benefits. *New York Times*, 16 December 2011.

Pear R (2018a). 'Short term' health insurance?: Up to 3 years under new Trump policy. *New York Times*, 1 August 2018. Available at: https://www.nytimes.com/2018/08/01/us/politics/trump-short-term-health-insurance.html (accessed 4 April 2019).

Pear R (2018b). Ruling on health care subsidies could prove costly for government. *New York Times*, 22 September 2018. Available at: https://www.nytimes.com/2018/09/22/us/politics/trump-insurance-subsidy-payments-obamacare.html (accessed 4 April 2019).

Pear R (2019). In Utah and Idaho GOP looks to curb Medicaid expansions that voters approved. *New York Times*, 4 February 2019. Available at: https://www.nytimes.com/2019/02/04/us/politics/utah-idaho-medicaid-expansions.html (accessed 20 October 2020).

Pear R, Haberman M, Abelson R (2017). Trump to scrap critical health care subsidies, hitting Obamacare again. *New York Times*, 12 October 2017. Available at: https://www.nytimes.com/2017/10/12/us/politics/trump-obamacare-executive-order-health-insurance.html (accessed 4 April 2019).

Pecquet J, Baker S (2011). Healthwatch; overnight health: health budgets back in spotlight. *The Hill*, 3 November 2011. Available at: https://thehill.com/policy/healthcare/191759-overnight-health-health-budgets-back-in-spotlight (accessed 1 July 2020).

Pennsylvania Department of Health (2016). Pennsylvania state health improvement plan, 2015–2020. Available at: https://www.health.pa.gov/topics/Health-Planning/Pages/State-Health-Improvement-Plan.aspx (accessed 6 January 2019).

Perez D, Sribney W, Rodríguez M, Sribney WM, Rodríguez MA (2009). Perceived discrimination and self-reported quality of care among Latinos in the United States. *JGIM: Journal of General Internal Medicine*, 24:548–54.

Petterson S, McNellis R, Klink K, Meyers D, Bazemore A (2018). The State of Primary Care in the United States: A Chartbook of Facts and Statistics. Robert Graham Center. Available at: https://www.graham-center.org/content/dam/rgc/documents/publications-reports/reports/PrimaryCareChartbook.pdf) (accessed 20 October 2020).

Pierron W, Fronstin P (2008). ERISA pre-emption: implications for health reform and coverage. Washington, DC: Employee Benefit Research Institute, Issue Brief 314.

Pilkerton CS, Singh SS, Bias TK, Frisbee SJ (2017). Healthcare resource availability and cardiovascular health in the USA. *BMJ Open*, 7:e016758. Available at: doi: 10.1136/bmjopen-2017-016758 (accessed 20 October 2020).

Pincus HA, Spaeth-Rublee B, Watkins KE (2011). The case for measuring quality in mental health and substance abuse care. *Health Affairs*, 30(4):730–6.

Plotzke M, Courtemanche C (2011). Does procedure profitability impact whether an outpatient surgery is performed at an ambulatory surgery center or hospital? *Health Economics*, 20(7):817–30.

Poghosyan L, Nannini A, Smaldone A, Clarke S, O'Rourke NC, Rosato BG et al. (2013). Revisiting scope of practice facilitators and barriers for primary care nurse practitioners: a qualitative investigation. *Policy, Politics, and Nursing Practice*, 14(1):6–15.

Polinski J et al. (2011). Changes in drug utilization during a gap in insurance coverage: an examination of the Medicare Part D coverage gap. *Plos Medicine*, 8(8):e1001075. Available at: http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001075 (accessed 1 July 2020).

Politico.com (2020). Trump announces US withdrawal from the World Health Organization. *Politico*, 29 May 2020. Available at: https://www.politico.com/news/2020/05/29/us-withdrawing-from-who-289799 (accessed 22 June 2020).

Pollack C, Gidengil C, Mehrotra A (2010). The growth of retail clinics and the medical home: two trends in concert or in conflict? *Health Affairs*, 29(5):998–1003.

Polsky D, Candon M, Saloner B et al. (2017). Changes in primary care access between 2012 and 2016 for new patients with Medicaid and private coverage. *JAMA Internal Medicine*, 177:588–90.

Pozen A, Cutler DM (2011). Medical spending differences in the United States and Canada: the role of prices, procedures, and administrative expenses. *Inquiry*, 47(2):124–34.

Prescott M, Nichter M (2014). Transnational nurse migration: future directions for medical anthropological research. *Social Science and Medicine (1982)*, 107:113–23.

Press R (2009). Outpatient total and unicompartmental knee replacement possible, study finds. *Orthopedics Today*, 29(6):8–9.

Preston SH, Ho J (2010). Low life expectancy in the United States: is the health care system at fault? National Library of Medicine, National Institutes of Health. Available at: http://www.ncbi.nlm.nih.gov/books/nbk62584/ (accessed 1 July 2020).

Princeton University (2012). The OTA legacy. Available at: http://www.princeton.edu/~ota/ (accessed 1 July 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.

Qaseem A, Weech-Maldonado R, Mkanta W (2007). The Balanced Budget Act (1997) and the supply of nursing home subacute care. *Journal of Health Care Finance*, 34(2):38–47.

Quadagno J (2000). Promoting civil rights through the welfare state: how Medicare integrated southern hospitals. *Social Problems*, 47(1):68–89.

Quadagno J (2004). How Medicare integrated southern hospitals, in AJ Stout, RAD Buono, WJ Chambliss (eds). Social Problems, Law, and Society. Lanham, MD: Rowman & Littlefield.

Quadagno J (2011). Interest group influence on the Patient Protection and Affordability Act of 2010: winners and losers in the health care reform debate. *Journal of Health Politics, Policy and Law*, 36(3):449–54.

Quittner J (2017). Why entrepreneurship could suffer if Obamacare is repealed. *Fortune*, 13 February 2017. Available at: http://fortune.com/2017/02/13/job-lock-aca-repeal/ (accessed 5 April 2019).

Raab G (1981). National/state/local relationships in health planning: interest group reaction and lobbying. In Health planning in the United States: selected policy issues, Vol II. Washington, DC: National Academies Press, 114–42.

Rabin E, Kocher K, McClelland M, Pines J, Hwang U, Rathlev N et al. (2012). Solutions to Emergency Department 'boarding' and crowding are underused and may need to be legislated. *Health Affairs*, 31(8):1757–66.

Radick R (2018). Corporate health care fraud prosecutions in the Trump administration: it ain't over till it's over. Available at: https://www.forbes.com/sites/insider/2018/09/26/corporate-health-care-fraud-prosecutions-in-the-trump-administration-it-aint-over-til-its-over/#1ecc9ab257d9 (accessed 4 April 2019).

Radley DC, McCarthy D, Hayes SL (2018). 2018 scorecard on state health system performance. Commonwealth Fund. Available at: https://www.commonwealthfund.org/publications/fund-reports/2018/may/2018-scorecard-state-health-system-performance (accessed 3 April 2019).

Radnofsky L (2011). Repeal health law? It won't be easy. *Wall Street Journal*, 29 October 2011.

Ralston JD et al. (2010). Patient experience should be part of meaningful-use criteria. *Health Affairs*, 29(4):607–13.

RAND (2010). Health care on aisle 7: the growing phenomenon of retail clinics. RAND Health Research Highlights. *Clinical Scholars Review*, 3(1):10–13.

RAND Corporation (2010). Analysis of the Patient Protection and Affordable Care Act (HR 3590). Policy brief. Available at: http://www.rand.org/pubs/research_briefs/2010/RAND_RB9514.pdf (accessed 1 July 2020).

Raphael D (2007). 'Poverty and health'. In: Poverty and policy in Canada: implications for health and quality of life. Toronto: Canadian Scholars' Press, 205–38.

Rechtoris M (2017). 51 things to know about the ASC industry, 2017. *Becker's ASC Review*, 21 February 2017. Available at: https://www.beckersasc.com/asc-turnarounds-ideas-to-improve-performance/50-things-to-know-about-the-asc-industry-2017.html) (accessed 20 October 2020).

Reinhard SC, Levine C, Samis S (2012). Home alone: family caregivers providing complex chronic care. Washington, DC: AARP Public Policy Institute. Available at: https://www.aarp.org/content/dam/aarp/research/public_policy_institute/health/home-alone-family-caregivers-providing-complex-chronic-care-rev-AARP-ppi-health.pdf) (accessed 20 October 2020).

Reinhard SC, Feinberg LF, Choula R, Houser A (2015). Valuing the invaluable: 2015 update. Washington DC: AARP Public Policy Institute. Available at: https://www.aarp.org/content/dam/aarp/ppi/2015/valuing-the-invaluable-2015-update-new.pdf) (accessed 20 October 2020).

Reinhardt U (2006). The pricing of US hospital services: chaos behind a veil of secrecy. *Health Affairs*, (25)1:57–69.

Reinhardt U (2009). How do hospitals get paid? A primer. *New York Times*, 23 January 2009. Available at: https://economix.blogs.nytimes.com/2009/01/23/how-do-hospitals-get-paid-a-primer/ (accessed 20 October 2020).

Renzetti G et al. (2009). Less air pollution leads to rapid reduction of airway inflammation and improved airway function in asthmatic children. *Pediatrics*, 123(3):1051–8.

Reuters (2010). Wellpoint targets breast cancer patients for rescission. *Medical News*, 24 April 2010.

Rhee TG, Rosenheck RA (2019). Initiation of new psychotropic prescriptions without a psychiatric diagnosis among US adults: rates, correlates, and national trends from 2006 to 2015. *Health Services Research*, 54(1):139–48.

RHIhub (2019). Rural health information hub. Available at: https://www.hrsa.gov/library/rural-health-information-hub-rhi-hub (accessed 20 October 2020).

Rhodes KV, Basseyn S, Friedman AB, Kenney GM, Wissoker D, Polsky D (2017). Access to primary care appointments following 2014 insurance expansions. *Annals of Family Medicine*, 15(2):107–12.

Rhodes KV, Bisgaier J, Lawson CC, Soglin D, Krug S, Van Haitsma M (2013). 'Patients who can't get an appointment go to the ER': access to specialty care for publicly insured children. *Annals of Emergency Medicine*, 61(4):394–403.

Rhodes KV, Kenney GM, Friedman AB et al. (2014). Primary care access for new patients on the eve of health care reform. *JAMA Internal Medicine*, 174:861–9.

Rice T (2011). A progressive turn of events. *Journal of Health Politics, Policy and Law*, 36(3):491–4.

Rice T (2015). Medicare to pay physicians based on performance. European Observatory on Health Systems and Policies: Health Systems and Policy Monitor: United States of America. Available at: https://www.hspm.org/countries/unitedstatesofamerica18112013/countrypage.aspx (accessed 24 January 2019).

Rice TH, Kominski GF (2014). Containing health care costs. In RM Andersen TH Rice, GF Kominski (eds). *Changing the US health care system*. 4th edn. San Francisco, CA: John Wiley & Sons.

Rice T, Unruh L (2016). The economics of health reconsidered. 3rd edn. Chicago, IL: Health Administration Press.

Rice T, Desmond K, Gabel J (1990). The Medicare Catastrophic Coverage Act: a post-mortem. *Health Affairs*, 9(3):75–87.

Rice T, Unruh LY, van Ginneken E, Rosenau P, Barnes AJ (2018). Universal coverage reforms in the USA: from Obamacare through Trump. *Health Policy*, 122(7):698–702. Available at: https://doi.org/10.1016/j.healthpol.2018.05.007 (accessed 20 October 2020).

Richardson L, Norris M (2010). Access to health and health care: how race and ethnicity matter. *Mount Sinai Journal of Medicine,* 77(2):166–77.

Rittenhouse D et al. (2011). Small and medium-size physician practices use few patient-centered medical home processes. *Health Affairs*, 30(8):1575–84.

Robertson L (2017). Medicaid's doctor participation rates. Available at: https://www.factcheck.org/2017/03/medicaids-doctor-participation-rates/ (accessed 15 January 2019).

Rodriguez F, Joynt KE, López L, Saldaña F, Jha AK (2011). Readmission rates for Hispanic Medicare beneficiaries with heart failure and acute myocardial infarction. *American Heart Journal*, 162(2):254–61.e3.

Rodwin MA (2011). New standards for Medicare review organizations: holding them and health plans accountable for their decisions. *Health Affairs*, 30(3):519–24.

Roemer R (2007). The continuing issue of medical malpractice liability. In RM Andersen, TH Rice, GF Kominski (eds). Changing the US health care system. San Francisco, CA: Jossey-Bass.

Roemer M (2017). Out-of-pocket health care expenses for medical services, by insurance coverage, 2000–2014. Agency for healthcare Research and Quality. Available at: https://meps.ahrq.gov/data_files/publications/st500/stat500.pdf (accessed 20 October 2020).

Rohrer JE, Angstman KB, Garrison GM, Maxson JA, Furst JW (2013). Family medicine patients who use retail clinics have lower continuity of care. *Journal of Primary Care and Community Health*, 4(2):150–3.

Rome V, Harris-Kojetin LD, Park-Lee E (2015). Variation in operating characteristics of adult day services centers, by center ownership: United States, 2014. *NCHS Data Brief*, 224:1–8.

Rosenau PV (1994). The impact of political structures and informal political processes on health policy: comparison of the United States and Canada. *Policy Studies Review*, 13:293–314.

Rosenbaum S, Tolbert J, Sharac J, Shin P, Gunsalus R, Zur J (2018). Community health centers: growing importance in a changing health care system. Kaiser Family Foundation. Available at: https://www.kff.org/report-section/community-health-centers-growing-importance-in-a-changing-health-care-system-issue-brief/ (accessed 20 October 2020).

Rosenthal E (2018*). An American Sickness.* New York: Penguin Press.

Ross S (2016). The debt report: the health care sector. Available at: https://www.investopedia.com/articles/markets/042216/debt-report-health-care-sector.asp#ixzz5QY4tUx9o).

Rowan K, McAlpine DD, Blewett LA (2013). Access and cost barriers to mental health care, by insurance status, 1999–2010. *Health Affairs*, 32(10):1723–30.

Rowland S, Leider JP, Davidson C, Brady J, Knudson A (2016). Impact of a community dental access program on emergency dental admissions in rural Maryland. *American Journal of Public Health*, 106(12):2165–70.

Roy V, Hurley K, Plumb E, Castellan C, McManus P (2015). Urban underserved program: an analysis of factors affecting practice outcomes. *Family Medicine*, 47(5):373–7.

Rudd RA, Seth P, David F, Scholl L (2016). Increases in drug and opioid-involved overdose deaths, United States, 2010–2015. *Morbidity and Mortality Weekly Report, Centers for Disease Control and Prevention*, 65(50–51):1445–52.

Rudin RS, Motala A, Goldzweig CL, Shekelle PG (2014). Usage and effect of health information exchange: a systematic review. *Annals of Internal Medicine*, 161(11):803–11.

Ryan AM, Nallamothu BK, Dimick JB (2012). Medicare's public reporting initiative on hospital quality had modest or no impact on mortality from three key conditions. *Health Affairs*, 31(3):585–92. Available at: https://doi.org/10.1377/hlthaff.2011.0719 (accessed 20 October 2020).

Ryan CL (2018). Computer and internet use in the United States: 2016. United States, US Department of Commerce, US Census Bureau. Available at: https://www.census.gov/content/dam/Census/library/publications/2018/acs/ACS-39.pdf (accessed 20 October 2020).

Sachs BP et al. (1995). The impact of extreme prematurity and congenital anomalies on the interpretation of international comparisons of infant mortality. *Obstetrics and Gynecology*, 85:941–6.

Salinsky E (2010). Governmental public health: an overview of state and local public health agencies. National Health Policy Forum, background paper no. 77. Washington, DC: George Washington University. Available at: http://www.nhpf.org/library/background-papers/BP77_GovPublicHealth_08-18-2010.pdf (accessed 1 July 2020).

Salinsky E, Loftis C (2007). Shrinking inpatient psychiatric capacity: cause for celebration or concern? National Health Policy Forum, Issue Brief no. 823. Available at: https://pubmed.ncbi.nlm.nih.gov/17679175/ (accessed 1 July 2020).

Salkever DS, Bice TW (1976). The impact of certificate of need controls on hospital investment. *Milbank Quarterly*, 54:185–214.

Saloner B, Hempstead K, Rhodes K, Polsky D, Pan C, Kenney GM (2018). Most primary care physicians provide appointments, but affordability remains a barrier for the uninsured. *Health Affairs*, 37(4):627–34.

Salsberg ES (2015). Is the physician shortage real? Implications for the recommendations of the Institute of Medicine Committee on the governance and financing of graduate medical education. *Academic Medicine: Journal of the Association of American Medical Colleges*, 90(9):1210–14.

SAMHSA (nd). SAMHSA – Behavioral Health Integration. Substance Abuse and Mental Health Services Administration. Available at: https://www.samhsa.gov/sites/default/files/samhsa-behavioral-health-integration.pdf (accessed 20 October 2020).

SAMHSA (2017). National survey on drug use and health: short report. Substance Abuse and Mental Health Services Administration, 29 June 2017. Available at: https://www.samhsa.gov/data/sites/default/files/report_2790/ShortReport-2790.html) (accessed 20 October 2020).

SAMHSA (2018). National mental health services survey (N-MHSS): 2017 data on mental health treatment facilities. Substance Abuse and Mental Health Services Administration.

Sampurno Ridwan E, Hadi H, Yu-Lin Wu, Pei-Shan T (2019). Effects of transitional care on hospital readmission and mortality rate in subjects with COPD: a systematic review and meta-analysis. *Respiratory Care*, 64(9):1146–56.

Sanger-Katz M (2018). 1,495 Americans describe the financial reality of being really sick. *New York Times*, 17 October 2018. Available at: https://www.nytimes.com/2018/10/17/upshot/health-insurance-severely-ill-financial-toxicity-.html (accessed 3 April 2019).

Sarasohn-Kahn J (2010). How smart phones are changing health care for consumers and providers. Report for the California Health Care Foundation, April 2010. Available at: http://www.chcf.org/publications/2010/04/how-smartphones-are-changing-health-care-for-consumers-and-providers (accessed 1 July 2020).

Sarnak DO, Squires DG, Kuzmak G, Bishop S (2017). Paying for prescription drugs around the world: why is the US an outlier? Commonwealth Fund, October 2017. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2017/oct/paying-prescription-drugs-around-world-why-us-outlier (accessed 20 October 2020).

Schneider E et al. (2017). Mirror Mirror 2017. Commonwealth Fund. Available at: https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2017_jul_schneider_mirror_mirror_2017.pdf (accessed 20 October 2020).

Schneider J et al. (2008). The economics of specialty hospitals. *Medical Care Research and Review*, 65(5):531–53.

Schoen C et al. (2011). Affordable Care Act reforms could reduce the number of underinsured US adults by 70 percent. *Health Affairs*, 30(9):1762–71.

Schoenbaum SC et al. (2011). Mortality amenable to health care in the United States: the roles of demographics and health systems performance. *Journal of Public Health Policy*, 32(4):407–29.

Schubel J, Broaddus M (2018). Uncompensated care costs fell in nearly every state as ACA's major coverage provisions took effect. Center on Budget and Policy Priorities. Available at: https://www.cbpp.org/research/health/uncompensated-care-costs-fell-in-nearly-every-state-as-acas-major-coverage (accessed 8 January 2019).

Schwamm LH, Reeves MJ, Pan W, Smith EE, Frankel MR, Olson D et al. (2010). Race/ethnicity, quality of care, and outcomes in ischemic stroke. *Circulation*, 121(13):1492–1501.

Schweitzer S, Comanor W (2007). Controlling pharmaceutical prices and expenditures. In RM Andersen, TH Rice, GF Kominski (eds). Changing the US health care system. San Francisco, CA: Jossey-Bass, 157–82.

Scott A, Liu M, Yong J (2018). Financial incentives to encourage value-based health care. *Medical Care Research and Review*, 75(1):3–32. Available at: https://doi.org/10.1177/1077558716676594 (accessed 20 October 2020).

Scott IA, Hilmer SN, Reeve E, Potter K, Le Couteur D, Rigby D et al. (2015). Reducing inappropriate polypharmacy: the process of deprescribing. *JAMA Internal Medicine*, 175(5):827–34.

Scutchfield F, Mays G, Lurie N (2009). Applying health services research to public health practice: an emerging priority. *Health Services Research*, 44(5 Pt 2):1775–87.

Seçkin G (2014). Health information on the web and consumers' perspectives on health professionals' responses to information exchange. *Medicine 2.0*, 3(2):e4. Available at: https://doi.org/10.2196/med20.3213 (accessed 20 October 2020).

Semega J, Kollar M, Creamer J, Mohanty J (2019). Income and poverty in the United States: 2018 current population reports. US Census Bureau. Available at: https://www.census.gov/content/dam/Census/library/publications/2019/demo/p60-266.pdf (accessed 20 October 2020).

Sengupta M, Rome V, Harris-Kojetin L, Caffrey C (2017). Long-term care providers and services users in the United States – residential care component. National Study of Long-Term Care Providers, 2015–2016: weighted national estimates and standard errors. Hyattsville, MD: National Center for Health Statistics. Available at: https://www.cdc.gov/nchs/data/nsltcp/2016_NSLTCP_RCC_Weighted_Estimates.pdf (accessed 20 October 2020).

Senior Living (2019). Nursing home costs. Senior Living Website. Available at: https://www.seniorliving.org/nursing-homes/costs/) (accessed 20 October 2020).

Sensharma A, Yabroff KR (2019). Do interventions that address patient cost-sharing improve adherence to prescription drugs? A systematic review of recently published studies. *Expert Review of Pharmacoeconomics and Outcomes Research*, 19(3):263–77.
Sequist T (2011). Ensuring equal access to specialty care. *New England Journal of Medicine*, 364(23):2258–9.
Shah AA, Cornwell EE, Williams M, Kane TD, Sandler A, Petrosyan M (2018). Disparities in access to acute rehabilitation after traumatic injuries in children: a nationwide examination. *Journal of the American College of Surgeons*, 227:e158.
Shakir M, Armstrong K, Wasfy JH (2018). Could pay-for-performance worsen health disparities? *Journal of General Internal Medicine*, 33(4):567–9. Available at: https://pubmed.ncbi.nlm.nih.gov/29302881/ (accessed 20 October 2020).
Shanafelt TD, Dyrbye LN, Sinsky C, Hasan O, Satele D, Sloan J et al. (2016). Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clinic Proceedings*, 91(7):836–48.
Shapiro S (2018). Analysis exposes folly of Trump proposals. *The Hill*, 10 August 2018. Available at: https://thehill.com/opinion/white-house/410264-analysis-exposes-folly-of-trump-proposals (accessed 6 January 2019).
Shi L, Singh DA (2008). Delivering health care in America: a systems approach. Boston, MA: Jones & Bartlett.
Shi L, Singh DA (2019). Delivering health care in America: a systems approach. 7th edn. Boston MA: Jones & Bartlett.
Shi L, Lebrun LA, Tsai J (2010). Access to medical care, dental care, and prescription drugs: the roles of race/ethnicity, health insurance, and income. *Southern Medical Journal*, 103(6):509–16.
Shih T, Nicholas LH, Thumma JR, Birkmeyer JD, Dimick JB (2014). Does pay-for-performance improve surgical outcomes? An evaluation of phase 2 of the premier hospital quality incentive demonstration. *Annals of Surgery*, 259(4):677–81.
Shin P, Sharac J, Rosenbaum S (2018). Kentucky's Medicaid work requirements: the potential effects on community health centers. *Health Affairs* blog, 12 April 2018. Available at: https://medicaidsupportsmaryland.org/kentuckys-medicaid-work-requirements-the-potential-effects-on-community-health-center/ (accessed 30 May 2019).
Siddiqui ZK, Wu AW, Kurbanova N, Qayyum R (2014). Comparison of hospital consumer assessment of healthcare providers and systems patient satisfaction scores for specialty hospitals and general medical hospitals: confounding effect of survey response rate. *Journal of Hospital Medicine*, 9(9):590–3.
Silow-Carroll S, Moody G (2011). Lessons from high- and low-performing states for raising overall health system performance. Commonwealth Fund, May 2011. Available at: https://www.commonwealthfund.org/publications/issue-briefs/2011/may/lessons-high-and-low-performing-states-raising-overall-health (accessed 1 July 2020).
Silver BC, Grabowski DC, Gozalo PL, Dosa D, Thomas KS (2018). Increasing prevalence of assisted living as a substitute for private-pay long-term nursing care. *Health Services Research*, 53(6):4906–20.
Sittig DF, Singh H (2012). Electronic health records and national patient-safety goals. *New England Journal of Medicine*, 367(19):1854–60.
Skopec L, Zuckerman S, Allen E, Aarons J (2019). Why did Medicare Advantage enrollment grow as payment pressure increased? Examining the role of market and demographic changes. Urban Institute. Available at: https://www.urban.org/sites/default/files/publication/100152/why_did_medicare_advantage_enrollment_grow_as_payment_pressure_increased_1.pdf (accessed 20 October 2020).
Slack D, Estes A (2019). Veterans harmed at VA nursing homes in 25 states, inspections find. *USA Today*, 28 March 2019. Available at: https://eu.usatoday.com/story/news/politics/2019/03/28/va-nursing-home-inspections-find-veterans-harmed-52-facilities/3276087002/ (accessed 29 April 2019).

Smiley RA, Lauer P, Bienemy C, Berg JG, Shireman E, Reneau Kaet al. (2018). The 2017 national nursing workforce study. *Journal of Nursing Regulation*, 9 (3 Supp):S1–88.

Sobel K, Salganicoff A, Ramaswamy A (2020). The status and likely impact of final regulations on payments for abortion coverage in ACA marketplace plans. Kaiser Family Foundation, 4 May 2020. Available at: https://www.kff.org/report-section/the-status-and-likely-impact-of-final-regulations-on-payments-for-abortion-coverage-in-aca-marketplace-plans-issue-brief/ (accessed 27 June 2020).

Sommers AS, Paradise J, Miller C (2011). Physician willingness and resources to serve more Medicaid patients: perspectives from primary care physicians. *Medicare and Medicaid Research Review*, 1(2).

Sommers BD, Long SK, Baicker K (2014). Changes in mortality after Massachusetts health care reform: a quasi-experimental study. *Annals of Internal Medicine*, 160(9):585–93.

Sommers BD, Blendon RJ, Orav J, Epstein AM (2016). Changes in utilization and health among low income adults after Medicaid expansion or expanded private insurance. *JAMA International Medicine*, 176(10):1501–9.

Sommers BD, Goldman AL, Blendon RJ, Orav EJ, Epstein AM (2019). Medicaid work requirements – results from the first year in Arkansas. *New England Journal of Medicine*, 381(11):1073–82.

Song Y et al. (2010). Regional variations in diagnostic practices. *New England Journal of Medicine*, 363(1):45–53.

Sorkin DH, Ngo-Metzger Q, De Alba I (2010). Racial/ethnic discrimination in health care: impact on perceived quality of care. *JGIM: Journal of General Internal Medicine*, 25(5):390–6.

Spencer CS, Gaskin DJ, Roberts ET (2012). The quality of care delivered to patients within the same hospital varies by insurance type. *Health Affairs*, 32(10):1731–9.

Spetz J, Pourat N, Chen X, Lee C, Martinez A, Xin K et al. (2019). Expansion of dental care for low-income children through a mobile services program. *Journal of School Health*, 89(8):619–28.

Starfield B (1998). Primary care: balancing health needs, services, and technology. New York: Oxford University Press.

Starfield B, Fryer G Jr (2007). The primary care physician workforce: ethical and policy implications. *Annals of Family Medicine*, 5(6):486–91.

Starr P (1982). The social transformation of American medicine. New York: Basic Books.

Starr P (2011). Remedy and reaction: the peculiar American struggle over health care reform. New Haven, CT: Yale University Press.

Statista (2018). Market share of leading health insurance companies in the United States in 2016, by direct premiums written. Available at: https://www.statista.com/statistics/216518/leading-us-health-insurance-groups-in-the-us/ (accessed 12 January 2019).

Statista (2019a). Total lobbying spending in the United States from 1998 to 2017 (in billion US dollars). Available at: https://www.statista.com/statistics/257337/total-lobbying-spending-in-the-us/ (accessed 15 February 2019).

Statista (2019b). Infant mortality rate in the United States as of 2018, by state. Available at: https://www.statista.com/statistics/252064/us-infant-mortality-rate-by-ethnicity-2011/ (accessed 29 March 2019).

Steiner CA, Karaca Z, Moore BJ, Imshaug MC, Pickens G (2018). Surgeries in Hospital-Based Ambulatory Surgery and Hospital Inpatient Settings, 2014. HCUP Statistical Brief, #223. Available at: https://www.hcup-us.ahrq.gov/reports/statbriefs/sb188-Surgeries-Hospital-Outpatient-Facilities-2012.jsp (accessed 20 October 2020).

Stevenson DG (2018). The future of nursing home regulation: time for a conversation? *Health Affairs* blog, 23 August 2018. Available at: https://www.healthaffairs.org/do/10.1377/hblog20180820.660365/full/ (accessed 20 October 2020).

Stewart K, Gostin LO (2011). Food and Drug Administration regulation of food safety. *JAMA*, 306(1):88–9.

Stoimenoff L, Dunn T (2018). Urgent care industry white paper 2018 (unabridged). The essential role of the urgent care center in population health. Urgent Care Association. Available at: https://www.ucaoa.org/LinkClick.aspx?fileticket=m3Bg5772Y-Q%3D&portalid=80 (accessed 20 October 2020).

Stolberg SG, Pear R (2019). Medicare for all is divisive (in the Democratic Party). *New York Times*, 18 March 2019. Available at: https://www.nytimes.com/2019/03/18/us/politics/democrats-health-care-medicare-for-all.html (accessed 3 April 2019).

Studdert DM et al. (2006). Claims, errors, and compensation payments in medical malpractice litigation. *New England Journal of Medicine*, 354:2024–33.

Sukumar S, Roghmann F, Trinh VQ, Sammon JD, Gervais M-K, Tan H-J et al. (2013). National trends in hospital-acquired preventable adverse events after major cancer surgery in the USA. *BMJ Open*, 3(6).

Sullivan S et al. (2009). Health technology assessment in health-care decisions in the United States. *Value in Health: the Journal of the International Society for Pharmacoeconomics and Outcomes Research*, 12(Suppl 2):S39–44.

Supreme Court of the United States (2012). National Federation of Independent Business et al. v. Sebelius, Secretary of Health and Human Services et al., Certiorari to the United States Court of Appeals for the Eleventh Circuit. No. 11–393. Argued 26–28 March 2012, decided 28 June 2012. Available at: http://www.supremecourt.gov/opinions/11pdf/11-393c3a2.pdf (accessed 1 July 2020).

Sussman J, Jordahl E (2011). A guide to financing strategies for hospitals – with special consideration for smaller hospitals. Chicago, IL: Health Research & Educational Trust, AHA Solutions and Kaufman, Hall & Associates, Inc.. Available at: https://www.aha.org/system/files/2018-02/guide-financing-strategies-hospitals-special-consideration-smaller-hospitals-2010.pdf (accessed 20 October 2020).

Swartz K (2006). Reinsuring health. New York: Russell Sage Foundation.

Tanenbaum SJ (2016). What is the value of value-based purchasing? *Journal of Health Politics, Policy and Law*, 41(5):1033–45.

Tang N et al. (2010). Trends and characteristics of US emergency department visits, 1997–2007. *JAMA*, 304(6):664–70.

Tankwanchi ABS, Vermund SH, Perkins DD (2015). Monitoring sub-Saharan African physician migration and recruitment post-adoption of the WHO code of practice: temporal and geographic patterns in the United States. *Plos ONE*, 10(4):e0124734.

Tappan J (2005). Medical-malpractice reform: is enterprise liability or no-fault a better reform? *Boston College Law Review*, 46:1095–1130.

Tarazi WW, Green TL, Sabik LM (2017). Medicaid disenrollment and disparities in access to care: evidence from Tennessee. *Health Services Research*, 52(3):1156–67.

Tavernise S (2018). US fertility rate fell to a record low, for a second straight year. *New York Times*, 16 May 2018. Available at: https://www.nytimes.com/2018/05/17/us/fertility-rate-decline-united-states.html (accessed 20 October 2020).

Tax Policy Center (2010). Medicare tax as proposed in Senate Health Bill and Reconciliation Act of 2010. Distribution of federal tax change by cash income level, 2013. Available at: https://www.taxpolicycenter.org/model-estimates/president-obamas-proposal-broaden-medicare-hospital-insurance-tax-base/senate-health (accessed 1 July 2020).

Terry K (2009). Hospitals expect financial gains from reform. *CBS News*, 27 August 2009. Available at: https://www.cbsnews.com/news/hospitals-expect-financial-gains-from-reform/ (accessed 1 July 2020).

Thimbleby H (2013). Technology and the future of healthcare. *Journal of Public Health Research*, 2(3):e28, 160–7.

Thirukumaran CP, Dolan JG, Webster PR, Panzer RJ, Friedman B (2015). The impact of electronic health record implementation and use on performance of the surgical care improvement project measures. *Health Services Research*, 50(1):273–89.

Thomas RJ, Balady G, Banka G, Beckie TM, Chiu J, Gokak S et al. (2018). 2018 ACC/AHA clinical performance and quality measures for cardiac rehabilitation: a report of the American College of Cardiology/American Heart Association Task Force on performance measures. *Journal of the American College of Cardiology (JACC)*, 71(16):1814–37.

Thompson G, O'Horo JC, Pickering BW, Herasevich V (2015). Impact of the electronic medical record on mortality, length of stay, and cost in the hospital and ICU: a systematic review and meta-analysis. *Critical Care Medicine*, 43(6):1276–82.

Thompson MJ, Hagopian A, Fordyce M, Hart LG (2009). Do international medical graduates (IMGs) 'fill the gap' in rural primary care in the United States? A national study. *Journal of Rural Health*, 25(2):124–34.

Timbie JW, Kranz AM, Mahmud A, Damberg CL (2019). Specialty care access for Medicaid enrollees in expansion states. *American Journal of Managed Care*, 25(3):e83–7. Available at: https://www.ajmc.com/view/specialty-care-access-for-medicaid-enrollees-in-expansion-states (accessed 20 October 2020).

Tobacco Control Legal Consortium (2018). Overview: federal regulation of tobacco: impact on state and local authority, July 2009. Available at: https://www.publichealthlawcenter.org/sites/default/files/fda-1.pdf (accessed 6 January 2019).

Tolbert J (2010). Health reform: an overview. Kaiser Commission on Medicaid and the Uninsured for KaiserEDU.org. Available at: http://www.kaiseredu.org/Tutorials-and-Presentations/Health-Reform-Overview.aspx?referrer=search (accessed 1 July 2020).

Torbati YJ (2010). Aging transit systems face budget crunch. *New York Times*, 24 July 2010. Available at: https://www.nytimes.com/2010/07/25/us/25transit.html (accessed 1 July 2020).

Trish E, Herring B (2018). Does limiting allowable rating variation in the small group health insurance market affect employer self-insurance? *Journal of Risk and Insurance*, 85(3):607–33. Available at: https://doi.org/10.1111/jori.12184 (accessed 20 October 2020).

Trivedi AN, Nsa W, Hausmann LRM, Lee JS, Ma A, Bratzler DW et al. (2014). Quality and equity of care in US hospitals. *New England Journal of Medicine*, 371(24):2298–2308.

Truong K (2019). New IRS rule opens up preventive care coverage for chronic disease by high-deductible health plans. *MedCity News*, 18 July 2019. Available at: https://medcitynews.com/2019/07/new-irs-rule-opens-up-preventive-care-coverage-for-chronic-disease-by-high-deductible-health-plans/ (accessed 20 October 2020).

Truman BI et al. (2000). Developing the guide to community preventive services—overview and rationale. *American Journal of Preventive Medicine*, 18(1S):18–26.

Turk AA, Nakhle A, Ward C (2019). Gender disparities in cardiovascular care or microvascular ischemia: the riddle of NSTEMI in women explored. *Journal of the American College of Cardiology*, 73(9):S1.

Twigg D, McCullough K (2014). Nurse retention: a review of strategies to create and enhance positive practice environments in clinical settings. *International Journal of Nursing Studies*, 51(1):85–92.

Unitzer J, Ya-Fen Chan, Hafer E, Knaster J, Shields A, Powers D et al. (2012). Quality improvement with pay-for-performance incentives in integrated behavioral health care. *American Journal of Public Health*, 102(6):e41–5.

US Bureau of Labor Statistics (2017). Labor force characteristics by race and ethnicity, 2016. Available at: https://www.bls.gov/opub/reports/race-and-ethnicity/2016/home.htm (accessed 9 November 2020).

US Census Bureau (2009). Internet use in the United States. Available at: https://www.census.gov/data/tables/time-series/demo/computer-internet/computer-use-1984-2009.html (accessed 1 July 2020).

US Census Bureau (2016a). Health insurance coverage in the United States: 2015. Available at: https://www.census.gov/content/dam/Census/library/publications/2017/demo/p60-260.pdf (accessed 1 May 2018).

US Census Bureau (2016b). New census data show differences between urban and rural populations. Available at: https://www.census.gov/newsroom/press-releases/2016/cb16-210.html (accessed 20 October 2020).
US Census Bureau (2017). Income and poverty in the United States: 2017. Available at: https://www.census.gov/content/dam/Census/library/publications/2017/demo/P60-259.pdf (accessed 19 September 2018).
US Census Bureau (2018). Quick facts: United States. Available at: https://www.census.gov/quickfacts/fact/table/US/PST045217 (accessed 15 February 2019).
US Census Bureau (2020). 2019 National and State Population Estimates. Available at: https://www.census.gov/newsroom/press-kits/2019/national-state-estimates.html (accessed 20 October 2020).
US Department of Food and Agriculture (2011). USDA mission areas. Available at: http://www.usda.gov/wps/portal/usda/usdahome?navid=USDA_MISSION_AREAS&navtype=RT&parentnav=AGENCIES_OFFICES (accessed 1 July 2020).
US Department of Health and Human Services (nd). Commissioned corps of the US public health service: HHS offices and agencies. Available at: https://www.usphs.gov/ (accessed 20 October 2020).
US Department of Health and Human Services (2000). Medicaid: a program overview. In A profile of Medicaid: 2000 chartbook, Section 1. Available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/TheChartSeries/downloads/2Tchartbk.pdf (accessed 1 July 2020).
US Department of Health and Human Services (2008). 2008 physical activity guidelines for Americans. Available at: https://health.gov/paguidelines/2008/pdf/paguide.pdf (accessed 29 April 2019).
US Department of Health and Human Services (2010a). History of SSA during the Johnson administration 1963–1968. Available at: http://www.ssa.gov/history/ssa/lbjmedicare1.html (accessed 1 July 2020).
US Department of Health and Human Services (2010b). Hill-Burton free and reduced-cost health care. Available at: https://www.hrsa.gov/get-health-care/affordable/hill-burton/index.html (accessed 1 July 2020).
US Department of Health and Human Services (2011a). Healthy People 2020. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/nchs/healthy_people/hp2020.htm (accessed 1 July 2020).
US Department of Health and Human Services (2011b). Health information privacy. Available at: https://www.hhs.gov/hipaa/index.html (accessed 1 July 2020).
US Department of Health and Human Services (2011c). Bundled payments for care improvement (BPCI) initiative: general information. Available at: https://innovation.cms.gov/innovation-models/bundled-payments (accessed 1 July 2020).
US Department of Health and Human Services (2011d). Unprecedented tool developed for small businesses to find and compare health insurance plans. Press release, 12 November 2011. Available at: http://www.hhs.gov/news/press/2011pres/11/20111118a.html (accessed 20 October 2020).
US Department of Health and Human Services (2011e). Reducing costs, protecting consumers: the Affordable Care Act on the one year anniversary of the Patients' Bill of Rights. Available at: https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/patients-bill-of-rights09232011a.pdf (accessed 1 July 2020).
US Department of Health and Human Services (2017). Health, US, 2017. Available at: https://www.cdc.gov/nchs/hus/index.htm (accessed 29 March 2019).
US Department of Health and Human Services (2018). HHS FY 2018 budget in brief. Available at: https://www.hhs.gov/sites/default/files/Consolidated BIB_ONLINE_remediated.pdf (accessed 19 November 2018).
US Department of Health and Human Services, Office of the Inspector General (2009). Comparing pharmacy reimbursement: Medicare Part D to Medicaid. Available at: http://oig.hhs.gov/oei/reports/oei-03-07-00350.pdf (accessed 1 July 2020).

US Department of Health and Human Services (2019). What is the US opioid epidemic? Department of Health and Human Services. Available at: https://www.hhs.gov/opioids/about-the-epidemic/index.html (accessed 20 October 2020).
US Department of Labor (2011). *Health plans & benefits: Employee Retirement Income Security Act—ERISA*. Available at: http://www.dol.gov/dol/topic/health-plans/erisa.htm (accessed 20 October 2020).
US Department of Labor (2019). Health plans & benefits: Employee Retirement Income Security Act – ERISA. Available at: http://www.dol.gov/dol/topic/health-plans/erisa.htm (accessed 6 January 2019).
US Department of State (2011). The budget reconciliation process. Congressional Research Service. Available at: https://crsreports.congress.gov/product/pdf/RL/RL30458 (accessed 1 July 2020).
US Department of Veterans Affairs (2018). FY 2018 budget submission. Available at: https://www.va.gov/budget/products.asp (accessed 19 November 2018).
US Department of Veterans Affairs (2019). Veterans Health Administration. Available at: https://www.va.gov/health/aboutvha.asp (accessed 29 March 2019).
US Environmental Protection Agency (2011). EPA History 1970–1985. Available at: https://archive.epa.gov/epa/aboutepa/epa-history-1970-1985.html (accessed 1 July 2020).
US Food and Drug Administration (2018). Center for tobacco products overview. Available at: https://www.fda.gov/TobaccoProducts/AboutCTP/ucm383225.htm (accessed 5 January 2019).
US PIRG (2018). New Trump administration rules undermine health insurance consumer protections. Available at: https://uspirg.org/news/usp/new-trump-administration-rules-undermine-health-insurance-consumer-protections (accessed 3 April 2019).
VA (2018). EHR modernization: a history of the electronic health record. Department of Veteran Affairs website. Available at: https://www.ehrm.va.gov/about/history (accessed 20 October 2020).
VA (2019). MyHealth*e*Vet Webpage. Available at: https://www.myhealth.va.gov/mhv-portal-web/home (accessed 20 October 2020).
Valdovinos E, Le S, Hsia RY (2015). In California, not-for-profit hospitals spent more operating expenses on charity care than for-profit hospitals spent. *Health Affairs*, 34(8):1296–1303.
van de Bovenkamp HM, Trappenburg MJ (2009). Reconsidering patient participation in guideline analysis. *Health Care analysis*, 17:198–216.
van de Water P (2018). Medicare is not 'bankrupt.' Available at: https://www.cbpp.org/research/health/medicare-is-not-bankrupt (accessed 13 February 2019).
Vega W, Rodriquez MA, Gruskin E (2009). Health disparities in the Latino population. *Epidemiology Review*, 31:99–112.
Vick B (2016). Analyzing rural versus urban differences in career dissatisfaction and plans to leave among Pennsylvanian physicians. *Journal of Rural Health*, 32(2):164–75.
Villa S, Kane N (2013). Assessing the impact of privatizing public hospitals in three American states: implications for universal health coverage. *Value in Health: Journal of the International Society for Pharmacoeconomics and Outcomes Research*, 16(1 Suppl):S24–33.
Villarruel A, Washington D, Lecher WT, Carver NA (2015). A more diverse nursing workforce. *AJN American Journal of Nursing*, 115(5):57–62.
Villasenor S, Krouse HJ (2016). Can the use of urgent care clinics improve access to care without undermining continuity in primary care? *Journal of the American Association of Nurse Practitioners*, 28(6):335–41.
Vimalananda VG, Dvorin K, Fincke BG, Tardiff N, Bokhour BG (2018). Patient, primary care provider, and specialist perspectives on specialty care coordination in an integrated health care system. *Journal of Ambulatory Care Management*, 41(1):15–24.
Volden C, Wiseman AE (2011). Breaking gridlock: the determinants of health policy change in Congress. *Journal of Health Politics, Policy and Law*, 36(2):227–64.

Vujicic M, Buchmueller T, Klein R (2016). Dental care presents the highest level of financial barriers, compared to other types of health care services. *Health Affairs*, 35(12):2176–82.

Wagner N (n.d.). How much has the assisted living industry grown? Small Business-Chron.com. Available at: http://smallbusiness.chron.com/much-assisted-living-industry-grown-69391.html (accessed 20 October 2020).

Wang Y, Leifheit LEC, Fine J, Pandolfi MM, Gao Y, Liu F et al. (2017). National trends and geographic variation in availability of home health care: 2002–2015. *Journal of the American Geriatrics Society*, 65(7):1434–40.

Waters ET, Little KC (2018). Highlights: the bipartisan Budget Act of 2018 provides community health centers with more funding and more scrutiny. Available at: https://www.feldesmantucker.com/highlights-the-bipartisan-budget-act-of-218-provides-community-health-centers-with-more-funding-and-more-scrutiny/ (accessed 3 April 2019).

Watson M, Dannenberg AL (2008). Investment in safe routes to school projects: public health benefits for the larger community. *Preventing Chronic Disease*, 5(3):1–7.

Webber L, Chalkidou K, Morrow S, Ferguson B, McPherson K (2018). What are the best societal investments for improving people's health? *BMJ (Clinical Research Ed.)*, 362:k3377. Available at: https://www.bmj.com/content/362/bmj.k3377 (accessed 20 October 2020).

Weech-Maldonado R, Qaseem A, Mkanta W (2009). Operating environment and USA nursing homes' participation in the subacute care market: a longitudinal analysis. *Health Services Management Research*, 22(1):1–7.

Weidner A, Davis A (2018). Influencing medical student choice of primary care worldwide: international application of the four pillars for primary care physician workforce. *Israel Journal of Health Policy Research*, 7(1):57.

Weiner S et al. (2008). Managing the unmanaged: a case study of intra-institutional determinants of uncompensated care at health care institutions with differing ownership models. *Medical Care*, 46(8):821–8.

Weinick RM, Bristol SJ, DesRoches CM (2009). The quality of care at urgent care centers. *Journal of Urgent Care Medicine*, 27–30. Available at: https://www.jucm.com/quality-care-urgent-care-centers/ (accessed 1 July 2020).

Weinick R, Burns R, Mehrotra A (2010). Many emergency department visits could be managed at urgent care centers and retail clinics. *Health Affairs*, 29(9):1630–6.

Weissert CS, Weissert WG (2006). Governing health: the politics of health policy. 3rd edn. Baltimore, MD: Johns Hopkins University Press.

Weissman J, Bigby J (2009). Massachusetts health care reform – near-universal coverage at what cost? *New England Journal of Medicine*, 361(21):2012–15.

Wen H, Druss BG, Cummings JR (2015). Effect of Medicaid expansions on health insurance coverage and access to care among low-income adults with behavioral health conditions. *Health Services Research*, 50(6):1787–1809.

Wennberg J, Fisher E, Skinner J (2002). Geography and the debate over Medicare reform. *Health Affairs* (web exclusive), W96–114.

Werner RM, Konetzka RT, Kim MM (2013). Quality improvement under nursing home compare: the association between changes in process and outcome measures. *Medical Care*, 51(7):582–8.

Westbrook JI, Baysari MT, Ling L, Burke R, Richardson KL, Day RO (2013). The safety of electronic prescribing: manifestations, mechanisms, and rates of system-related errors associated with two commercial systems in hospitals. *Journal of the American Medical Informatics Association*, 20(6):1159–67.

Westphal J, Marnocha S, Chapin T (2016). a pilot study to explore nurse educator workforce issues. *Nursing Education Perspectives*, 37(3):171–3.

Wheat JR, Leeper JD, Murphy S, Brandon JE, Jackson JR (2018). Educating physicians for rural America: vValidating successes and identifying remaining challenges with the rural medical scholars program. *Journal of Rural Health*, 34(Suppl 1):s65–74.

Wheatley B (2013). Transforming care delivery through health information technology. *Permanente journal*, 17(1):81–6. Available at: https://doi.org/10.7812/TPP/12-030 (accessed 20 October 2020).

Whitmore H et al. (2011). The individual insurance market before reform: low premiums and low benefits. *Medical Care Research and Review*, 68(5):594–606.

WHO (2006). The world health report 2006: working together for health. Geneva: WHO Press.

WHO (2008). *The right to health – fact sheet*. Available at: https://www.who.int/gender-equity-rights/knowledge/right-to-health-factsheet/en/ (accessed 20 October 2020).

WHO (2010). Global code of practice on the international recruitment of health personnel. Geneva: World Health Organization. Available at: https://www.who.int/hrh/migration/code/WHO_global_code_of_practice_EN.pdf (accessed 1 July 2020).

WHO (2019). Health workforce migration. Geneva: World Health Organization. Available at: https://www.who.int/hrh/migration/en/ (accessed 20 October 2020).

Wildavsky A (1973). If planning is everything, maybe it's nothing. *Policy Sciences*, 4(3):277–95.

Wilkinson R (1996). Unhealthy societies: the afflictions of inequality. New York: Routledge.

Wilkinson RG, Marmot M (2003). Social determinants of health: the solid facts. World Health Organization.

Williams MD, Asiedu GB, Finnie D, Neely C, Egginton J, Finney Rutten LJ et al. (2019). Sustainable care coordination: a qualitative study of primary care provider, administrator, and insurer perspectives. *BMC Health Services Research*, 19(1):1–10.

Willink A, Schoen C, Davis K (2016). Dental care and Medicare beneficiaries: access gaps, cost burdens, and policy options. *Health Affairs*, 35(12):2241–8.

Wilper AP, Woolhandler S, Lasser KE, McCormick D, Bor DH, Himmelstein DU (2009). Health insurance and mortality in US adults. *American Journal of Public Health*, 99(12):2289–95.

Winkelman TNA, Chang VW (2018). Medicaid expansion, mental health, and access to care among childless adults with and without chronic conditions. *Journal of General Internal Medicine*, 33(3):376–83.

Wintemute GJ, Braga AA, Kennedy DM (2010). Private-party gun sales, regulation, and public safety. *New England Journal of Medicine*, 363(6):508–11.

Winters BD et al. (2016). Validity of the agency for health care research and quality patient safety indicators and the centers for Medicare and Medicaid hospital-acquired conditions: a systematic review and meta-analysis. *Medical Care*, 54(12):1105–11.

Witters D (2019). US Uninsured Rate Rises. Gallup Poll, 23 January 2019. Available at: https://news.gallup.com/poll/246134/uninsured-rate-rises-four-year-high.aspx (accessed 20 October 2020).

Woolf SH, Aron L eds. (2013). Shorter lives, poorer health. Washington, DC: National Academies Press.

World Bank (2018). World development indicators. Available at: https://datacatalog.worldbank.org/dataset/world-development-indicators (accessed 9 September 2018).

World Bank (2019). Health equity and financial protection indicators. Available at: http://datatopics.worldbank.org/health-equity-and-financial-protection/ (accessed 29 March 2019).

World Bank (2020). Fertility rate, total. Available at: https://data.worldbank.org/indicator/SP.DYN.TFRT.IN (accessed 20 October 2020).

Wright AA, Katz IT (2018). Beyond burnout – redesigning care to restore meaning and sanity for physicians. *New England Journal of Medicine*, 378(4):309–11.

Wynne B, LaRosa J, Cowey T (2019). A look inside the hospital transparency final rule. *Health Affairs* blog, 18 November 2019. Available at: https://www.healthaffairs.org/do/10.1377/hblog20191118.74200/full/ (accessed 20 October 2020).

Wysock A, Sigalo N, Cheh V (2019). Patterns of care and home health utilization for community-admitted Medicare patients. Mathematica Report for US Department of Health and Human Services, Assistant Secretary for Planning and Evaluation Office of Disability, Aging and Long-Term Care Policy. Available at: https://aspe.hhs.gov/system/files/pdf/261016/ComAdmit.pdf (accessed 20 October 2020).

Yamana H, Kodan M, Ono S, Morita K, Matsui H, Fushimi K et al. (2018). Hospital quality reporting and improvement in quality of care for patients with acute myocardial infarction. *BMC Health Services Research*, 18(1):523.

Yu ZJ, Elyasi M, Amin M (2017). Associations among dental insurance, dental visits, and unmet needs of US children. *Journal of the American Dental Association*, 148(2):92–9.

Zezza M, Abrams M, Guterman S (2011). The Innovation Center at one year: much progress, more to be done. Commonwealth Fund blog, 29 November 2011.

Zhang S (2018). Why can't the US treat gun violence as a public-health problem? *The Atlantic*, 15 February 2018. Available at: https://www.theatlantic.com/health/archive/2018/02/gun-violence-public-health/553430/ (accessed 6 January 2019).

Zhang X, Tai D, Pforsich H, Lin VW (2018). United States registered nurse workforce report card and shortage forecast: a revisit. *American Journal of Medical Quality*, 33(3):229–36.

Zogg CK, Scott JW, Shah AA, Tsai TC, Rose JA, Frisch C et al. (2015). Gains in access to rehabilitation at age 65 years: a regression discontinuity analysis of the National Trauma Data Bank. *Journal of the American College of Surgeons*, 221(4):e37.

Zuckerman KE, Perrin JM, Hobrecker K, Donelan K, Zuckerman KE, Perrin JM et al. (2013). Barriers to specialty care and specialty referral completion in the community health center setting. *Journal of Pediatrics*, 162(2):409–14.e1.

9.2 Useful websites

Consumer Reports
www.consumerreports.org

Federal poverty guidelines
https://www.healthcare.gov/glossary/federal-poverty-level-fpl/

Health Profession Shortage Areas by state and county
http://hpsafind.hrsa.gov/

Health Reform Implementation Timeline
http://healthreform.kff.org/Timeline.aspx

Healthy People programme
http://www.healthypeople.gov/2020

HEDIS and performance management
http://www.ncqa.org/tabid/59/Default.aspx

Home Health Compare
http://www.medicare.gov/HomeHealthCompare/search.aspx

Hospital Compare
https://www.medicare.gov/hospitalcompare/search.html

Hospital Quality Alliance
http://www.hospitalqualityalliance.org/hospitalqualityalliance/index.html
How do hospitals get paid? A primer
http://economix.blogs.nytimes.com/2009/01/23/how-do-hospitals-get-paid-a-primer
Kaiser Family Foundation's Medicaid State Health Facts
https://www.kff.org/interactive/medicaid-state-fact-sheets/
Kaiser Family Foundation US Global Health Policy
http://globalhealth.kff.org/
Mayo Clinic's patient information
http://www.mayoclinic.com/health-information/
Medicaid
http://www.medicaid.gov/
Military Health System
http://www.health.mil/
National Hospice and Palliative Care Organization
http://www.caringinfo.org/i4a/pages/index.cfm?pageid=3354
Nursing Home Compare
http://www.medicare.gov/NHCompare/
Nursing home quality initiative
http://www.cms.gov/NursingHomeQualityInits/10_NHQIQualityMeasures.asp#TopOfPage
Physicians for a National Health Program
http://www.pnhp.org
Scientific Advisory Panel Formation Process
http://www.epa.gov/scipoly/sap/panel.htm
United States Access Board
http://www.access-board.gov/about.htm
USAID
www.usaid.gov
US Global Health Initiative
https://www.usaid.gov/global-health
US President's Emergency Plan for AIDS Relief
www.pepfar.gov

9.3 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. The latest version of the template (2019) is available on the Observatory website http://www.euro.who.int/__data/assets/pdf_file/0009/393498/hit-template-eng.pdf?ua=1

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 out-of-pocket payments, voluntary health insurance 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 learned 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.

9.4 About the authors

Thomas Rice PhD is Professor of Health Policy and Management in the Fielding School of Public Health, University of California, Los Angeles. A health economist, he received his Doctorate in Economics from the University of California, Berkeley. Previously he was on the faculty of the University of North Carolina, Chapel Hill School of Public Health. His research interests include comparative international health systems, markets and regulation, health insurance and the behavioural economics of health.

Pauline Rosenau PhD is Professor Emerita of Management, Policy and Community Health at the School of Public Health, Health Science Center, University of Texas-Houston. She received her Doctorate in Political Science from the University of California, Berkeley, and her Master's in Public Health from UCLA. Previously she was a professor at the University of Quebec-Montreal. Her research interests include long-term residential care, comparative international health policy, US health policy, pay-for-performance, competition in the health sector, public/private policy partnerships, the implications of investor status for the provision of health services, pharmacy policy and post-modernism.

Lynn Y. Unruh PhD is Professor of Health Services Administration in the Department of Health Management and Informatics at the University of Central Florida. A nurse and health economist, Dr Unruh received her Bachelor's in Nursing at the University of Illinois and her Doctorate in Economics at the University of Notre Dame. Her research focuses on workforce issues at the micro and macro level.

Andrew J. Barnes PhD is Associate Professor of Health Behavior and Policy in the Virginia Commonwealth University School of Medicine. A health economist, he received his Doctorate in Health Services from the University of California, Los Angeles. His research focuses on understanding the psychology and economics of health insurance choices and evaluations of substance use and tobacco policies.

Ewout van Ginneken PhD is Coordinator of the Berlin office of the European Observatory on Health Systems and Policies at the Berlin University of Technology. He holds a Master's degree in Health Policy and Administration from Maastricht University in the Netherlands, and a PhD in Public Health from the Berlin University of Technology. His expertise is in comparative international health systems research and health policy research. His main interests include health access, health financing, insurance competition, care purchasing, integrated care, cross-border care and migrants' access to care.

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 policymakers 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)

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
(2002d[g], 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)

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])

Slovakia
(2000, 2004, 2011, 2016)

Slovenia
(2002, 2009, 2016)

Spain
(2000[h], 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)

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

NORTH AMERICAN
OBSERVATORY
on Health Systems and Policies

The North American Observatory on Health Systems and Policies (NAO) is a collaborative partnership of interested researchers, academic organizations, governments, and health organizations. Through its work, the NAO promotes evidence-informed health system policy decision-making in Canada, Mexico, and the United States of America at the national and the subnational levels of government. Academic partners include the Institute of Health Policy Management and Evaluation at the Dalla Lana School of Public Health, University of Toronto, the National Institute of Public Health, Mexico, and the UCLA Fielding School of Public Health.

The European Observatory on Health Systems and Policies is a partnership, hosted by WHO/Europe, and has a secretariat in Brussels as well as 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