Exploring the U.S. Healthcare System

EXPLORING THE U.S. HEALTHCARE SYSTEM

KAREN VALAITIS

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INTRODUCTION

Welcome to ***Exploring the U.S. Healthcare System***. This open educational resource (OER) introduces students to foundational characteristics of the U.S. healthcare system. It begins with an overview of the healthcare system that includes a brief history and a description of the current state of health in the U.S. The second chapter describes health delivery systems, including inpatient, outpatient, post-acute, long-term, palliative, and hospice care. An introduction to health insurance in the third chapter will include an overview of basic concepts, private insurance, public insurance, and recent trends. The fourth chapter presents issues related to the triple aim of improving access to care, increasing the quality of care, and lowering the cost of care. The fifth chapter reviews how the government intervenes in healthcare and presents current policy issues related to the Patient Protection and Affordable Care Act and value-based contracting. The final chapter on the topic of technology in healthcare provides an overview of health information technology, health information legislation, emerging technologies, and the future of health information technology. Chapter content is supplemented with additional material such as reports, briefs, figures, infographics, definitions, and key terms. Chapters two through six end with

a "knowledge check" exercise to actively engage students with the content. While this OER book was curated and created for undergraduate students in the field of healthcare, it is my hope that it will continue to be customized to other programs and shared again.

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Open Educational Resources (OER)

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It is also adapted with permission from *United States: Health system review 2020* by Thomas Rice, Pauline Rosenau, Lynn Y. Unruh, and Andrew J. Barnes.

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CHAPTER 1: OVERVIEW OF THE U.S. HEALTHCARE SYSTEM

Learning Objectives

- Outline the historical background and basic structure of the U.S. healthcare system.
- Discover the role of public and private regulation.
- Examine concepts related to individual health and public health.
- Describe vulnerable populations and the overarching goals initiated to reduce health disparities.

Chapter Sections:

1.1 HISTORICAL BACKGROUND

Sections:

1.1.1 Medical Training

In the early years of the United States (U.S.) being a formal country, medical care largely lacked a firm foundation in scientific knowledge and principles. As a result, many treatments caused more harm than benefit to the patients (Rothstein, 1987). For example, physicians frequently used techniques now considered barbaric: bleeding, induced

vomiting, and treatment with harmful agents such as mercury (Parascandola, 1976).

Before the mid 1800s, medical training was much less formal than the large academic institutions of today, with most physicians being trained as apprentices (Rothstein, 1972). By the mid-1850s, physicians started opening medical schools in affiliation with nearby universities, increasing the number of formal medical schools from only a small number to more than 40 by the mid-1850s (Rothstein, 1972). However, though the number of formal medical schools increased, the quality of education needed to be improved, and many medical schools needed more resources for medical education (Starr, 1982).

Through most of the nineteenth century, many different types of practitioners in the U.S. competed to provide care, much of which was of poor quality (Starr, 1982). In addition, physicians typically had neither particularly high incomes nor social status. This situation changed only gradually towards the beginning of the twentieth century with the confluence of various factors. These factors included a more scientific basis for medicine, improvements in medical training, improvements in 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 U.S. health policy. Commissioned by the

Carnegie Foundation, the report provided a detailed account of the poor quality of most U.S. medical schools at the time. The report eventually led to improved medical school curricula, increased length of training, and stringent admission to training – as well as the closure of some of the worst medical school facilities. As a result, individuals faced higher barriers to entering the field.

Today, besides requiring a bachelor's degree, physicians and surgeons typically need either a Medical Doctor (M.D.) or a Doctor of Osteopathic Medicine (D.O.) degree. No specific undergraduate degree is required to enter an M.D. or D.O. program. However, applicants to medical school usually have studied subjects such as biology, physical science, or healthcare and related fields. Some medical schools offer combined undergraduate and medical school programs that last six to eight years. Schools may also offer combined graduate degrees, such as dual Doctor of Medicine-Master of Business (M.D.-M.B.A.), dual Doctor of Medicine-Master of Public Health (M.D.-M.P.H.), or dual Doctor of Medicine-Doctor of Philosophy (M.D.-Ph.D.). After medical school, almost all graduates enter a residency program in their specialty of interest. A residency usually takes place in a hospital or clinic and varies in duration, typically lasting from three to nine years, depending on the specialty. Subspecialization, such as infectious diseases or hand surgery, includes additional training in one to three years of a fellowship. (Bureau of Labor Statistics, 2022). According to the Association of American

Medical Colleges (2021), as of 2020, there were 155 accredited MD-granting institutions and 41 accredited DO-granting institutions in the U.S.1.1.2

1.1.2 Hospitals

Hospitals in the early years were actually **almshouses**. Almshouses were simply housing facilities for chronically ill, older adults, those with severe mental illness, individuals with cognitive disabilities, and orphans (Rothstein, 1987). Later, **pest houses** were created to isolate healthy individuals from those infected with smallpox and other communicable diseases. Caring for the sick was a secondary goal of the pest houses, the primary goal being the isolation of healthy individuals (Rothstein, 1987). Due to the insufficient care provided by almshouses, physicians started calling for independent hospitals to be established in large cities. This call resulted in the establishment of Pennsylvania Hospital in Philadelphia, Massachusetts General Hospital in Boston, and New York Hospital in New York City. For example, Pennsylvania Hospital in Philadelphia was founded in 1751 as the nation's first institution to treat medical conditions. Unfortunately, though, these first hospitals fell short of their goals and merely supplemented the work of the almshouses rather than replacing them (Rothstein, 1987). During the early part of the nineteenth century, only poor, isolated, or socially disadvantaged individuals received medical care in hsopital

institutions. When middle- or upper-class became sick or needed surgery, they were routinely taken care of in their own home (Rosenberg, 1987).

Hospitals changed dramatically during the latter part of the nineteenth century and the first part of the twentieth century. 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 homes), and they mainly served the poor. However, as the scientific basis of medicine improved, facilities were enhanced and physicians became better trained – the hospital was transformed. The modern hospital evolved into a not-for-profit organization wherein physicians were granted **clinical privileges** to treat their patients.

> **Definition: *Clinical privileges*** are permissions to provide medical and other patient care services in the granting institution, within defined limits, based on the individual's education, professional license, experience, competence, ability, health, and judgment (Military Health System, 2013).

This model 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). The following infographics from the American Hospital Association (2022) includes statistics regarding the number of hospitals by type as of the year 2020:

Fast Facts on U.S. Hospitals, 2022
Two-thirds of Community Hospitals are Urban

65%
Urban
(3,343)

35%
Rural
(1,796)

Community Hospitals by Urban vs Rural (Total 5,139) FY2020

Fast Facts on U.S. Hospitals, 2022

Two-thirds of Community Hospitals are System-affiliated

68%
System-affiliated
(3,483)

32%
Independent
(1,656)

Community Hospitals by System-affiliated vs Independent (Total 5,139), FY 2020

Source: American Hospital Association. Fast Facts on U.S. Hospitals, 2022
https://www.aha.org/statistics/fast-facts-us-hospitals
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Fast Facts on U.S. Hospitals, 2022

Most Community Hospitals Are Not-for-profit

24%
Investor-owned
For-profit
(1,228)

58%
Non-government
Not-for-profit
(2,960)

19%
State and Local
Government
(951)

Community Hospitals by Ownership Type (Total 5,139), FY2020

Fast Facts on U.S. Hospitals, 2022

Most Hospitals Are Community Hospitals

84%
(5,139)

10%
(685)

3%
(207)

2%
(112)

Community | Non-federal Psychiatric | Federal Government | Other

Number of Hospitals by Type (Total 6,093), FY2020

Link to infographic: AHA – Fast Facts on U.S. Hospitals, 2022

1.1.3 Health Insurance

According to the U.S. Census Bureau (2021a), private health insurance is coverage by a health plan provided through an employer or union, purchased by an individual from a private health insurance company, or coverage through TRICARE. Public health insurance includes plans funded by governments at the federal, state, or local levels. The major categories of public health insurance are Medicare, Medicaid, the Children's Health Insurance Program (CHIP), Veterans health care program, state-specific plans, and the Indian Health Service (IHS).

Private sector

The U.S. healthcare system developed largely through the private sector. The first health plan started in 1929 to serve teachers. This model served as the blueprint for the first Blue Cross plans available in the U.S. (Raffel, 1980). However, the concept of insurance coverage began as workers' compensation, providing pay to workers who lost work due to job-related injuries or

Key Term

Insurance.
There is no universal agreement on a definition of insurance. However, most

definitions have these two key elements:

1) **Risk is transferred** – An uncertain, possibly large, loss is transformed by an insurance company into a certain, small cost or premium for the insured, and an individual or entity transfers risk to an insurance company. Purchasing insurance is a common

illness. By 1912, many countries in Europe had started national health insurance plans. The U.S. resisted this with its entry into World War I as national insurance was considered social insurance, strongly affiliated with German ideals (Starr, 1982).

Private health insurance in the U.S. began around the early 1930s, with the establishment of non-profit Blue Cross plans for hospital care and soon after that 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 (Braveman & Metzler, 2012). 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 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 encountering 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

example of transferring risk from an individual or entity to an insurance company.

2) **Risk is spread** – An insurer spreads risk over a large enough group for the law of large numbers to predict both total losses and the probability of a single loss with some accuracy. The large losses experienced by a few members of the group

are distributed through an insurer to a large number of premium payers, each of whom pays a relatively small amount.

(U.S. Government Accountability Office, 2006)

'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). As a result, by 1951 more Americans obtained hospital insurance from commercial insurers than Blue Cross (Law, 1974).

The number of Americans with private health insurance coverage grew dramatically from 1940 to 1960 (Figure 1-1). While only six million had some type of health insurance coverage in 1939, this had risen to 75 million people or half the population by 1950 which was only about 10 years (Health Insurance Institute, 1961). 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 partly because

employer contributions to employee private health insurance plans were not considered taxable income for the employee (Gabel, 1999; Helms, 2008).

Figure 1-1

Number of Persons with Health Insurance (thousands), 1940-1960
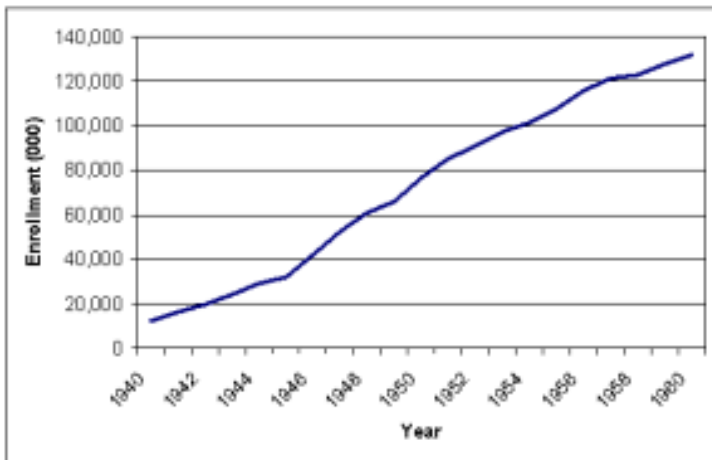
(Health Insurance Institute, 1961)

However, there were other reasons for expanding private insurance through employment. Unions negotiated for coverage for their members, which was considered 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 program for providing coverage until the mid-1960s, this demand was partly satisfied through the employment-based system, at least for many of those in the workplace.

As a non-profit organization, the Blues gave communities access to medical care and protection against personal financial ruin by accepting all individuals regardless of health status. By the 1970s and '80s, however, Blue plans were losing market share to for-profit insurance companies marketing to healthier populations and charging lower premiums. In 1994, the Blue Cross and Blue Shield Association's Board of Directors voted to eliminate the membership standard that requires member Plans to be organized as not-for-profit companies. As a result, several Blue Cross and Blue Shield plans reorganized into for-profit organizations.

Public sector

No major government health insurance programs operated until the mid-1960s, and most government involvement until then was through state rather than federal regulations. Then, in 1965, the first major federal health insurance programs, Medicare and Medicaid, were established. Before their creation, various indigent and charity care programs existed

for low-income patients. In one such program, 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 (U.S. Department of Health and Human Services [DHHS], 2000). Aside from the Affordable Care Act, the creation of Medicare and Medicaid is likely the most significant health policy to date.

Medicare covered Americans aged 65 and older, and Medicaid covered about half of those with low incomes. In 1972, Medicare coverage was expanded to include the disabled population and those with end-stage renal disease. Before the enactment of Medicare, it was common for elderly Americans to be without health insurance. For example, over half of Americans aged 65 and older had hospital coverage before 1963, with far fewer insured for surgery or outpatient care (DHHS, 2010a). Moreover, hospital coverage among seniors before 1963 varied by region, from a low of 43% to a high of 68% (Finkelstein, 2007). However, since Medicare was enacted, almost all Americans aged 65 and over are covered for hospital and physician care. 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 physician 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.

Passage of the Medicare legislation (i.e., Title XVIII of the Social Security Act) 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. As a result, passage of the legislation did not occur until several 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 program. 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 retrospective system based on costs to 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 program payments. The RBRVS system also aimed to reduce the gap in payments for the provision of primary care services compared to specialist services.

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 and other provisions related to long-term care, but Congress repealed it just a year later. One reason was that the new benefit would 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 et al., 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.

In March 2010, the U.S. enacted major healthcare reform. The Patient Protection and Affordable Care Act (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; (Note: Legislation passed in late 2017 ended federal penalties beginning with the 2019 tax year; however, individual states can still impose a penalty.)

3. A requirement that firms with over 50 employees offer coverage or pay a penalty;

4. A major expansion of Medicaid;

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.

Concept Review

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://pressbooks.uwf.edu/ushealthcaresystem/?p=3144#h5p-1

[Click here to move on to 1.2 Organization & Regulation.](#)

1.2 ORGANIZATION & REGULATION

Sections:

1.2.1 System Organization

The U.S. healthcare system is **not** a fully coordinated system. Merriam-Webster's (2023) dictionary definition of a system is "a regularly interacting or interdependent group of items forming a unified whole." However, the healthcare system in the U.S. is made up of **loosely structured** insurance, delivery, payment, and financing networks. According to Lübbeke et al. (2019), five key stakeholders comprise the U.S. healthcare

system: the healthcare consumers, insurers and payers, healthcare providers, medical suppliers, and policy-makers and regulators (Fig. 1-2).

Figure 1-2

Components of the U.S. Healthcare System

Consumers	The recipients of healthcare services
Insurers & Payers	The entity that insures or pays for the healthcare services rendered to the consumer
Providers	All of the individuals and organizations that provide healthcare services to the consumer
Suppliers	The companies that supply and distribute medical supplies and medication
Policy-Makers & Regulators	The federal, state, and local authorities that establish rules to protect the health of the population and ensure safe healthcare delivery

(Lübbeke et al., 2019)

I. Consumers

Healthcare consumers are the individuals who receive healthcare services (Institute of Medicine, 2010). They are also referred to as patients. Although consumers play a major role

in healthcare decision-making, consumers typically depend on the advice of healthcare professionals for medical decisions. However, they may be unaware of the underlying financial obligations. For example, a patient may elect to undergo a medical procedure with an in-network provider, a provider who has negotiated rates with the insurance company to provide specific services at a designated rate (Institute of Medicine, 2010). However, unbeknownst to the consumer, the provider may have an out-of-network staff, for instance, an anesthesiologist, that charges full prices for the services provided, leaving the consumer with an expensive, out-of-pocket bill. Therefore, the consumer must be completely aware of their medical decisions and inquire about fully in-network providers and options.

II. Insurers and Payers

Healthcare financing depends on collecting money for healthcare services and the reimbursement of health providers for the rendered services. The payers include the private sector (insurance companies), the public sector (government and state agencies), and the consumers (out-of-pocket expenses) that share responsibility for the financing functions (National Conference of State Legislatures, 2020). The third-party payer is any organization that pays or insures healthcare expenses for the healthcare consumer. Each service provided to a consumer has a designated fee called a charge (set by the provider) or

a rate (set by a third-party payer). Healthcare providers often rely on the patient's insurance to obtain payment for rendered services which controls how much the provider is paid for his/her services. Financing makes access to healthcare easier, thereby increasing the demand for healthcare services. The U.S. is a multi-payer financing system. Unlike most developed countries with a single-payer system, where national health insurance programs are run by the government and financed through taxes, the U.S. healthcare system is comprised of a complicated mix of public and private, for-profit and non-profit insurance and providers (Donnelly et al., 2019).

III. Providers

Healthcare providers include all individual providers and organizations providing healthcare services to consumers.

Individual providers

Healthcare providers include practitioners, group medical practices, hospitals, nursing homes, and ambulatory facilities (rehabilitation, surgery, imaging, etc.). Because healthcare is a complex set of services provided in various settings, it is not surprising that the human resources needed to provide these services are also varied and complex. The U.S. Bureau of Labor

Statistics (2018a, 2018b) categorizes healthcare personnel into two main categories:

1) Healthcare practitioners and technical occupations: This first category is further divided into a) practitioners with diagnostic and treatment capabilities and b) 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 their specialized care, these therapists consult and practice with other health professionals. Healthcare technologists and technicians include 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.

2) Healthcare support occupations: The category of healthcare support occupations includes several types of **aides** (e.g., nursing, psychiatric, and home health aides) and dental assistants.

Definition: *Aides* are "individuals that provide routine care and assistance to patients under the direct supervision of other health care professionals and/or perform routine maintenance and general assistance in health care facilities and laboratories" (National Center for Educational Statistics, 2010).

Review webpage (National Library of Medicine, n.d.): [Types of Healthcare Providers](#)

Review webpage (National Library of Medicine, 2017): [Health Occupations](#)

Organizations

The physical facilities for healthcare in the U.S. can be placed into several categories. Primary and ambulatory care facilities include doctors' and dentists' offices, and community and public health buildings. Hospitals and ambulatory surgical centers 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. They may be licensed by state governments, certified by the Centers for Medicare and Medicaid Services for the Medicare (CMS) program, 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 for the physical structure and the quality and safety of services provided by the facility. In addition, new building construction may be regulated by a state's certificate of need (CON) law.

Review webpage (Joint Commission, 2023): [Healthcare Settings](#)

IV. Suppliers

Healthcare suppliers are the companies that supply and distribute medical supplies and medicine, including pharmaceutical and medical equipment companies. Healthcare suppliers play a major role in the healthcare system by providing medical supplies, such as wheelchairs, CPAP machines, oxygen, and medication that people need to live a high-quality life. Insurance companies often cover a large portion of the cost of medical supplies and prescriptions.

V. Policy-Makers and Regulators

The delivery of healthcare services is regulated by the federal, state, and local authorities that establish rules to protect the population's health. The Centers for Medicare and Medicaid Services provide government-subsidized medical coverage and set reimbursement standards that regulate how healthcare services are organized and delivered to ensure the safety, security, and quality of healthcare services (CMS, 2022). The U.S. Department of Health and Human Services is the government agency responsible for protecting patient privacy, combating fraudulent claims, and ensuring healthcare agencies comply with federal laws (Straube, 2013; DHHS, 2013). State medical boards are the agencies that license medical doctors and ensure medical professionals are competent, properly trained, and adhere to the highest standards of excellence (Carlson & Thompson, 2005). Agencies such as the Joint Commission monitor the quality of services by implementing a system that examines healthcare organizations based on compliance and improvement activities (Joint Commission, 2022a; Wadhwa & Huynh, 2022). The Joint Commission grants compliant healthcare organizations a seal of approval after the organization earns accreditation. These seals are important to healthcare organizations because Medicare considers these seals when determining reimbursement (Joint Commission, 2022a; Wadhwa & Huynh, 2022). The government is central to all aspects of healthcare delivery,

including licensing requirements, standards for participation in government-run programs, security and privacy laws regarding patient health information, and setting standards for patient safety and quality transparency standards of healthcare organizations (Straube, 2013).

1.2.2 System Regulation

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

I. Regulation of Third-Party Payers

In the U.S., the regulation and governance of private insurers, or third-party payers is shared by federal and state agencies. The current regulatory environment facing third-party payers has arisen primarily from three pieces of legislation: the McCarran-Ferguson Act, The Employee Retirement Income Security Act, and the Patient Protection and Affordable Care Act (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 (U.S. Government Accountability Office [GAO], 2005). This Act essentially 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 (GAO, 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 The Employee Retirement Income Security Act (ERISA), enacted by Congress in 1974 (Congressional Research Service Report for Congress, 2009). ERISA is a federal law that sets minimum standards for most voluntarily established retirement and health plans in private industry to provide protection for individuals in these plans (U.S. Department of Labor, n.d.). ERISA regulations fall under the Department of Labor in the federal government, 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 private employers to 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 (U.S. Department of Labor, 2019).

The ACA was initiated in 2010 to reform the U.S. healthcare system and expand health insurance to cover the large number of uninsured individuals. The ACA required all U.S. citizens and legal residents be covered by public or private insurance. Failure to do so would require the uninsured to pay a tax, with some exemptions, such as religious beliefs and financial hardships. However, the individual mandate was removed in 2019, and the tax penalty has been repealed. The ACA also requires insurance plans to cover young adults under their parent's policy until they are 26 years of age (National Conference of State Legislatures, 2016). There are three key tenets of the ACA: 1) Enables states to expand Medicaid coverage to individuals with incomes 138% below the federal poverty level; 2) Establishes state-based insurance marketplaces to keep prices competitively low; 3) Emphasizes prevention and wellness efforts.

II. Regulation of Providers

Healthcare professionals

Physicians, nurses, and many allied health professionals are accredited by licensing boards in the state in which they practice. State licensing boards issue new licenses to healthcare professionals with the requisite educational credentials, renew licenses and enforce basic standards of practice through their power to suspend or revoke licenses to practice (Field, 2007). In addition to state-level regulation, the CMS regulates physicians at the federal level by imposing criteria for reimbursing providers for services rendered. For example, Medicare requires physicians to meet certain requirements, many overlapping 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.

Definition: ***Payer mix*** is a listing of the individuals and organizations that pay for a provider's services, along with each payer's percentage of revenues (Williams & Torrens, 2002). Example: Managed Care 41%, Medicare 32%, Medicaid 9%, Self-pay 7%, Commercial 6%,

Other 5%

Furthermore, the CMS does not reimburse physicians for self-referred services. The Ethics in Patient Referrals Act (also known as the Stark Law), was passed in 1989 to prohibit payment to physicians for referrals to services in which they or their family members have a financial interest (CMS, 2011b). Managed care organizations also regulate physicians. Managed care organizations are integrated and coordinated to provide care to a specific patient population. Managed care organizations regulate physician behavior through various mechanisms for controlling costs (e.g., **capitation, gatekeeping, pre-authorization**) and improving quality (e.g., **disease management**). Managed care

Key Terms

Capitation. A fixed sum of money paid to the provider per time unit (usually monthly) for each patient being treated by the provider (Bureau of Labor Statistics, n.d.).

Gatekeeping. The

requirement to visit a general practitioner, family practitioner, general internal medicine physician, or general pediatrician in an ambulatory setting and to obtain a referral prior to accessing specialist care (Garrido et al., 2011).

Pre-authorization. A decision by a health insurer or plan that a healthcare

organizations also give credentials to physicians in their network, again ensuring providers can demonstrate basic requirements to practice similar to those required by state licensing boards and the CMS.

Hospitals at which physicians practice also regulate physicians through credentialing. Hospitals oversee physician practice through review boards and can discipline physicians for substandard care by requiring additional medical education or supervision by colleagues, or suspending clinical privileges (Field, 2007). Hospital regulation in the U.S. occurs primarily via certification requirements (e.g., The Joint Commission, Det Norske Veritas Healthcare, the Center for Improvement in Healthcare Quality, and the Healthcare Facilities Accreditation Program), federal law on who must be treated at

hospitals, and 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 collaborates with more than 4000 hospitals in the U.S. (Joint Commission, 2022b). 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.

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

service, treatment plan, prescription drug or durable medical equipment is medically necessary (Bureau of Labor Statistics, n.d.).

Disease management. A comprehensive, integrated approach to care and reimbursement based on a disease's natural course (Zitter, 1997).

request is made for examination or treatment for an emergency medical condition, including active labor, 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 cannot 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 limited access to primary care, such as the uninsured.

In 1946 Congress enacted the Hospital Survey and Construction Act, permitting State-Federal cooperation in providing needed community health facilities. This law, sponsored by Senators Lister Hill and Harold H. Burton, came to be known as the Hill-Burton Act. It authorized matching Federal grants, ranging from one-third to two-thirds of the total cost of construction and equipment, to public and nonprofit private health facilities (U.S. Commission on Civil Rights, 1965). As a result of the Hill-Burton Act, many U.S. hospitals are required to take Medicare and Medicaid patients. They are, therefore, subject to CMS eligibility criteria for reimbursement through conditions of participation (CoPs) and conditions for coverage (CoCs). As a result, the CMS is able to regulate hospital care by ensuring facilities receiving CMS reimbursement meet minimum quality and safety standards (CMS, 2011d). These conditions for participation and coverage also apply to many other health services delivery

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

III. Regulation of Pharmaceuticals and Medical Devices

Pharmaceuticals in the U.S. are primarily regulated at the federal level by the Food and Drug Administration (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. The fourth phase of testing continues after the drug has been released. The clinical trials stage often takes several years, with costs largely borne by the drug manufacturer. However, for biological products, the ACA included a new statutory provision to expedite the FDA approval process for drugs that are 'biosimilar' with an FDA-approved biological product (FDA, 2012). The use of biosimilars is estimated to save the U.S. healthcare system approximately $44 billion between 2014 and 2024 (Boccia et al., 2017). The FDA also regulates pharmaceutical advertising through its labeling requirements

and ability to penalize drug companies conducting advertising that it deems excessive or misleading. From the 1990s, drug companies started advertising directly to consumers. Among the high-income countries, the U.S. is one of the few to permit direct-to-consumer advertising of prescription-only drugs (Magrini, 2007). While no laws in the U.S. prevent drug companies from advertising prescription drugs directly to consumers, the FDA can prosecute manufacturers for false or misleading advertising.

In addition to regulating pharmaceuticals, the FDA is the principal regulator of medical devices and radiation-emitting products used in the U.S. 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 color televisions (FDA, 2011a). The Medical Device Amendments of 1976 to the Federal Food, Drug and Cosmetic Act established three regulatory classes for medical devices. The three classes are based on the degree of control necessary to assure the various types of devices are safe and effective (U.S. Food and Drug Administration, 2017).

Class I – These devices present minimal potential for harm to the user and are often simpler in design than Class II or Class III devices. Forty-seven percent (47%) of all medical devices fall under this category. Examples include enema kits

and elastic bandages. The majority of Class I devices (i.e., 95%) are **exempt** from FDA notification before marketing. Examples of exempt devices are manual stethoscopes, mercury thermometers and bedpans. If a device falls into a generic category of exempted Class I devices, a premarket notification application and FDA clearance is not required before marketing the device in the U.S. However, the manufacturer is required to register their establishment and list their generic product with FDA.

Class II – Most medical devices are considered Class II devices. Examples of Class II devices include powered wheelchairs and some pregnancy test kits. Forty-three percent (43%) of medical devices fall under this category. Section 510(k) of the Food, Drug and Cosmetic Act requires those device manufacturers who must register to notify FDA their intent to market a medical device. This is known as **Premarket Notification (PMN)**. Under PMN, before a manufacturer can market a medical device in the United States, they must demonstrate to FDA's satisfaction that it is substantially equivalent (as safe and effective) to a device already on the market. If FDA rules the device is substantially equivalent, the manufacturer can market the device. Most Class II devices require Premarket Notification.

Class III – These devices usually sustain or support life, are implanted, or present potential unreasonable risk of illness or injury. Examples of Class III devices include implantable pacemakers and breast implants. Ten percent (10%) of medical

devices fall under this category. A primary safeguard in the way FDA regulates medical devices is the requirement that manufacturers must submit to FDA a **Premarket Approval (PMA)** application if they wish to market any new products that contain new materials or differ in design from products already on the market. A PMA submission must provide valid scientific evidence collected from human clinical trials showing the device is safe and effective for its intended use. 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 the proper use of devices and the health and safety of patients (FDA, 2011b).

IV. Regulation of Patient Privacy and Human Subjects

Regulations regarding the privacy of health information in the U.S. were initiated in the Health Insurance Portability and Accountability Act (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 (DHHS, 2011). The security portion has administrative, physical, and technical safeguards to ensure the confidentiality of patient information. The Office of Civil Rights enforces

HIPAA privacy and security rules under the DHHS. The Patient Safety and Quality Improvement Act of 2005 (PSQIA) establishes a voluntary reporting system to enhance the data available to assess and resolve patient safety and healthcare quality issues. PSQIA provides federal privilege and confidentiality protections for patient safety information to encourage the reporting and analysis of medical errors (DHHS, 2011). The PSQIA 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 DHHS 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 U.S. 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.

Knowledge Check for sections 1.1 & 1.2

An interactive H5P element has been excluded from this version of the text. You can view it online here:

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Click here to move on to 1.3 Health Status.

1.3 HEALTH STATUS

Sections:

1.3.1 Health and Wellness

I. Definitions

Definitions: *Health* is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, and *wellness* is the optimal state of health of

individuals and groups, expressed as a positive approach to living" (World Health Organization, 1948).

While health is the outcome of an interest or a goal, wellness includes the process needed to achieve health. However, there may be social or cultural challenges to supporting wellness and upholding a prevention approach. In addition to cultural challenges, behavior change is complex, and compliance with wellness habits and programs is poor (Reif et al., 2020). Therefore, a culture that empowers employees or patients to make wellness a part of their routine and builds awareness of the multidimensional value of wellness may encourage progress.

To achieve wellness, a person must be healthy in six interconnected dimensions of wellness (Fig. 1-3): emotional, occupational, physical, social, intellectual, and spiritual (National Wellness Institute [NWI], 2022). Learning about these Six Dimensions of Wellness can help a person choose how to make wellness a part of everyday life. In addition, wellness strategies are practical ways to start developing healthy habits that can positively impact physical and mental health. According to NWI (2022), The six dimensions of wellness are:

1. **Emotional:** The degree to which one feels positive and

enthusiastic about oneself and life. In this dimension, it is important to be aware of and accept one's feelings & take an optimistic approach to life.

2. Occupational: Satisfaction in one's work. In this dimension, it is important to seek out a career whichis consistent with one's personal values, interests, and beliefs. Individuals are encouraged to develop functional, transferable skills through structured involvement opportunities, and to remain active and involved.

3. Physical: A focus and emphasis on movement, fitness, sleep, relaxation, and maintaining a healthy lifestyle, including the consumption of foods and beverages that enhance rather than impair good health.

4. Social: Making contributions to the common welfare of one's community and thinking of others. In
this dimension, it is important to live in harmony with others and the environment.

5. Intellectual: Life-long learning that stretches one's thinking and challenge one's mind in both intellectual and creative pursuits, in addition to Identifying potential problems and choosing appropriate courses of action based on available information.

6. Spiritual: Being true to oneself, living each day in a way that is consistent with one's values and beliefs, going beyond faith and religion to ponder the meaning of life, and be tolerant of the beliefs of others.

Figure 1-3

Six Interconnected Dimensions of Wellness
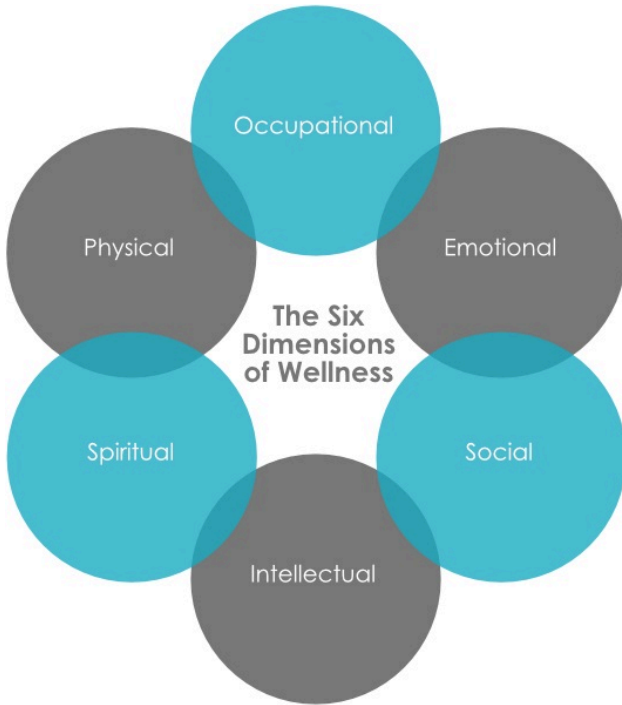
(NWI, 2022)

Review fact sheet (NWI, n.d.): Six Dimensions of Wellness Model

Then, download and take (NWI, 2022**):** The NWI_Six-Dimensions-of-Wellness-Self-Assessment_2022

II. Investment in Health

Everyone prefers being healthy to being sick. The demand for healthcare is, in part, an expression of this preference. One thing that makes healthcare different from most other goods

and services is that it is simultaneously an investment. The money a person spends on being healthy today will also benefit them in the future. The impact of our healthcare choices can be seen in terms of mortality rate and productivity.

Mortality rate

Mortality rate is a measure of the frequency of death among a defined population during a specified time interval (Centers for Disease Control and Prevention [CDC], 2012). According to the CDC (2021), the ten leading causes of death in 2020 were:

1. Heart disease
2. Cancer
3. COVID-19
4. Accidents (unintentional injuries)
5. Stroke (cerebrovascular diseases)
6. Chronic lower respiratory diseases
7. Alzheimer's disease
8. Diabetes
9. Influenza and pneumonia
10. Nephritis, nephrotic syndrome, and nephrosis

These ten leading causes accounted for 74.1% of all deaths in the United States (U.S.) in 2020. The following report from the National Center for Health Statistics presents 2020

mortality data on deaths and death rates by demographic and medical characteristics.

Review report (CDC, 2021): NCHS Data Brief – Mortality in the United States, 2020

Productivity

Being healthy also means that a person can work and earn wages. One of the costs of poor health is lost days at work. Many employers are unaware of the linkages between health and productivity. While employers understand that investing in human capital improves the company's bottom line, they are only beginning to understand the impact health has on worker productivity. Indirect costs of poor health, including absenteeism, disability, or reduced work output may be several times higher than direct medical costs (Partnership for Prevention, 2005). According to the Integrated Benefits Institute (2019), "poor worker health costs U.S. employers $575 billion a year from lost productivity due to worker absence and chronic conditions to injuries leading to workers compensation. For every dollar an employer spends on healthcare benefits, another $0.61 is spent on illness-related absence, disability, and reduced work output."

Review infographic (Integrated Benefits Institute, 2019): The Cost of Poor Health

Workplace health programs can increase productivity. In general, healthier employees are more productive (CDC, 2016):

- Healthier employees are less likely to call in sick or use vacation time due to illness.
- Companies that support workplace health have a greater percentage of employees at work every day.
- Because employee health frequently carries over into better health behavior that impacts both the employee and their family (such as nutritious meals cooked at home or increased physical activity with the family), employees may miss less work caring for ill family members.
- Similarly, workplace health programs can reduce presenteeism — the measurable extent to which health symptoms, conditions, and diseases adversely affect the productivity of individuals who choose to remain at work.

The cost savings of providing a workplace health program can be measured against absenteeism among employees, reduced overtime to cover absent employees, and costs to train replacement employees (CDC, 2016).

III. Health Indicators

Definition: *Health indicators* are "summary

measures that capture relevant information on different attributes and dimensions of health status and performance of a health system" (Pan American Health Organization, 2018).

"Health indicators attempt to describe and monitor a population's health status. The reason indicators are used in public health is to drive decision-making for health. The ultimate objective is to improve the health of the population and reduce unjust and preventable inequalities" (Pan American Health Organization, 2018). Three common health indicators include life expectancy, deaths from cancer, and infant mortality.

Life expectancy

Definition: "*Life expectancy* is defined as the average number of years that a person could expect to live if he or she experienced the age-specific mortality rates prevalent in a given country in a particular year" (Organization for Economic Cooperation and Development [OECD],

2011).

Overall, compared to other high-income countries, life expectancy in the U.S. is lower and mortality is higher. The following report provides data and trends on the performance of the U.S. compared to health systems in OECD countries and key emerging economies:

Review report (OECD, 2021): <u>Health at a Glance 2021: OECD Indicators – Highlights for the United States</u>

However, there is disagreement over whether or not this relatively poor performance on mortality is due to structural problems with the healthcare system. According to the CDC (2022a):

> Life expectancy at birth in the United States declined nearly a year from 2020 to 2021, according to new provisional data from the CDC's National Center for Health Statistics. That decline – 77.0 to 76.1 years – took U.S. life expectancy at birth to its lowest level since 1996. The 0.9 year drop in life expectancy in 2021, along with a 1.8 year drop in 2020, was the biggest two-year decline in life expectancy since 1921-1923. More specifically:
>
> - In 2021, life expectancy at birth was 76.1 years, declining by 0.9 years from 77.0 in 2020.
> - Life expectancy at birth for males in 2021 was 73.2 years, representing a decline of 1.0 years from 74.2

years in 2020.

- For females, life expectancy declined to 79.1 years, decreasing by 0.8 years from 79.9 years in 2020.
- Excess deaths due to COVID-19 and other causes in 2020 and 2021 led to an overall decline in life expectancy between 2019 and 2021 of 2.7 years for the total population, 3.1 years for males, and 2.3 years for females.
- The declines in life expectancy since 2019 are largely driven by the pandemic. COVID-19 deaths contributed to nearly three-fourths or 74% of the decline from 2019 to 2020 and 50% of the decline from 2020 to 2021.
- An estimated 16% of the decline in life expectancy from 2020 to 2021 can be attributed to increases in deaths from accidents/unintentional injuries. Drug overdose deaths account for nearly half of all unintentional injury deaths.
- Other causes of death contributing to the decline in life expectancy from 2020 to 2021 include heart disease (4.1% of the decline), chronic liver disease and cirrhosis (3.0%), and suicide (2.1%).

Review report (CDC, 2022a): [Provisional Life Expectancy Estimates for 2021](#)

Deaths from cancer

Cancer was the second leading cause of death in the U.S. in 2020. In 2020, there were 602,350 cancer deaths; 284,619 were among females and 317,731 among males. In the past 20 years,

from 2001 to 2020, cancer death rates decreased 27%, from 196.5 to 144.1 deaths per 100,000 population (CDC, 2022b).

Advancing age is the most important risk factor for cancer overall and for many individual cancer types, although cancer can be diagnosed at any age (National Cancer Institute, 2021). Lung cancer was the leading cause of cancer death, accounting for 23% of all cancer deaths. Other common causes of cancer death were cancers of the colon and rectum (9%), pancreas (8%), female breast (7%), prostate (5%), and liver and intrahepatic bile duct (5%). Other cancers individually accounted for less than 5% of cancer deaths. Bone cancer is most frequently diagnosed in children and adolescents (i.e., people under age 20), with about one-fourth of cases occurring in this age group (National Cancer Institute, 2021). Previous research suggests that trends in cancer death rates reflect population changes in cancer risk factors, screening test use, diagnostic practices, and treatment advances (CDC, 2022b).

Review report (CDC, 2022b): [CDC – An Update on Cancer Deaths in the United States](#)

Infant mortality

Definition: *Infant mortality* is the death of an infant before his or her first birthday.

The infant mortality rate is the number of infant deaths for every 1,000 live births. In addition to giving us key information about maternal and infant health, the infant mortality rate is an important marker of the overall health of a society. In 2020, 19,578 infant deaths were reported in the U.S., a decline of 3% from 2019. The infant mortality rate was 5.42 deaths per 1,000 live births in 2020, a decline of 3% from the 2019 rate of 5.58 and the lowest rate reported in U.S. history (CDC, 2022c).

In 2020, the five leading causes of all infant deaths were the same as those in 2019: congenital malformations (21% of infant deaths), disorders related to short gestation and low birth weight (16%), sudden infant death syndrome (7%), unintentional injuries (6%), and maternal complications (6%). By state, infant mortality ranged from a low of 3.92 infant deaths per 1,000 births in California to a high of 8.12 in Mississippi. Geographically, infant mortality rates in 2020 were highest among states in the south (CDC, 2022c). The following report from the National Center for Health Statistics presents infant mortality statistics from 2020:

Review report (CDC, 2022c): [Infant Mortality in the United States, 2020](#)

1.3.2 Public Health

I. Key Terms:

- **Clinical care**: prevention, treatment, and management of illness and preservation of mental and physical well-being through services offered by medical and allied health professions, also known as healthcare.
- **Determinant**: a factor that contributes to the generation of a trait.
- **Epidemic:** an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.
- **Health outcome:** the result of a medical condition that directly affects the length or quality of a person's life.
- **Intervention:** action or ministration (i.e., the act or process of ministering) that produces an effect or is intended to alter the course of a pathologic process.
- **Pandemic:** denoting a disease affecting or attacking the population of an extensive region, country, or continent.
- **Population health:** an approach to health that aims to improve the health of an entire population.
- **Prevention:** action to avoid, forestall, or circumvent a happening, conclusion, or phenomenon (e.g., disease).

(Centers for Disease Control and Prevention, n.d.)

II. Public Health Defined

Definition: *Public health is* "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities, and individuals" (Winslow, 1920).

There are clear distinctions between the practice of medicine and public health. The science, diagnostics, and treatment of diseases are at the center of the practice of medicine. Advances in medical science have created areas of practice specialization such as pediatrics, obstetrics, oncology, and geriatrics. Medical practitioners follow an ethos based on social responsibility, beneficence, gratitude, confidentiality, and humility to preserve human life and do no harm (Indla & Radhika, 2019). Dating back to 400 B.C., the Hippocratic Oath was the gold standard that physicians and medical auxiliaries followed; however, current practitioners must also consider bioethics. Medical practitioners treat individual patients and teach people how to take care of themselves. Whereas, public health professionals work to prevent the spread of communicable diseases, manage public health hazards, and respond to natural or man-made disasters.

III. Public Health Services

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 analyze the data. Both private and state labs analyze 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. Control and prevention measures are then implemented by the CDC in collaboration with the affected area(s). Local public health departments offer both screening and treatment for endemic communicable diseases, such as STDs and tuberculosis (Salinsky, 2010).

Environmental hazards (i.e., non-infectious, non-occupational) 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 plans and directs an overall program of environmental harm reduction (CDC, 2019a). Also, the Agency for Toxic Substances and Disease Registry 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 hazards typically controlled are air pollution, contaminated

food and water, chemical spills, radon gas, mosquitoes, and other disease vectors (CDC, 2019b; Salinsky, 2010).

Efforts to prepare for emergencies, disasters, and terrorism are led by the CDC and the U.S. Department of Health & Human Services, Office of the Assistant Secretary for Preparedness and Response, which publish protocols for action for state and local government agencies (CDC, 2019a; Salinsky, 2010). However, each local public health agency is responsible for developing a customized plan based on CDC protocols. 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. In addition, 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.

Federal and state governments fund health promotion and disease prevention services, while local health departments and community health centers provide the services. Most local public health departments provide screening and treatment for communicable diseases such as sexually transmitted diseases and tuberculosis. Many also provide services to high-risk women and children (i.e., low-income, special healthcare needs). Services may include perinatal home visits, well-child clinics, developmental screening, and nutrition counseling for women, infants, and children (WIC).

Some other prevention services include 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 non-governmental organizations, nonhealthcare-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). Other public health services include the promotion of occupational health, surveillance of population health and well-being, screening programs, as well as mental, correctional, and child health services.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://pressbooks.uwf.edu/
ushealthcaresystem/?p=38#h5p-5

Click here to move on to 1.4 Health Disparities.

1.4 HEALTH DISPARITIES

Sections:

1.4.1 Health Disparities Defined

Definition: *Health disparities* are preventable differences in the burden of disease, injury, violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other population groups and

communities (Centers for Disease Control and
Prevention [CDC], 2017).

Health disparities exist in all age groups, including older
adults. Even though life expectancy and overall health have
improved in recent years for most Americans, not all older
adults benefit equally because of factors such as economic
status, race, and gender (CDC, 2017).

According to the 2018 United States (U.S.) Census report,
the year 2030 marks a demographic turning point for the
United States. The nation's population is projected to age
considerably and become more racially and ethnically diverse.
The population of people who are more than one race is
projected to be the fastest-growing racial or ethnic group over
the next several decades, followed by Asian Americans and
Hispanic/Latino Americans (CDC, 2022d).

1.4.2 Vulnerable Populations

"Vulnerable populations include patients who are elderly,
racial or ethnic minorities, elderly, socioeconomically
disadvantaged, uninsured, or those with certain medical
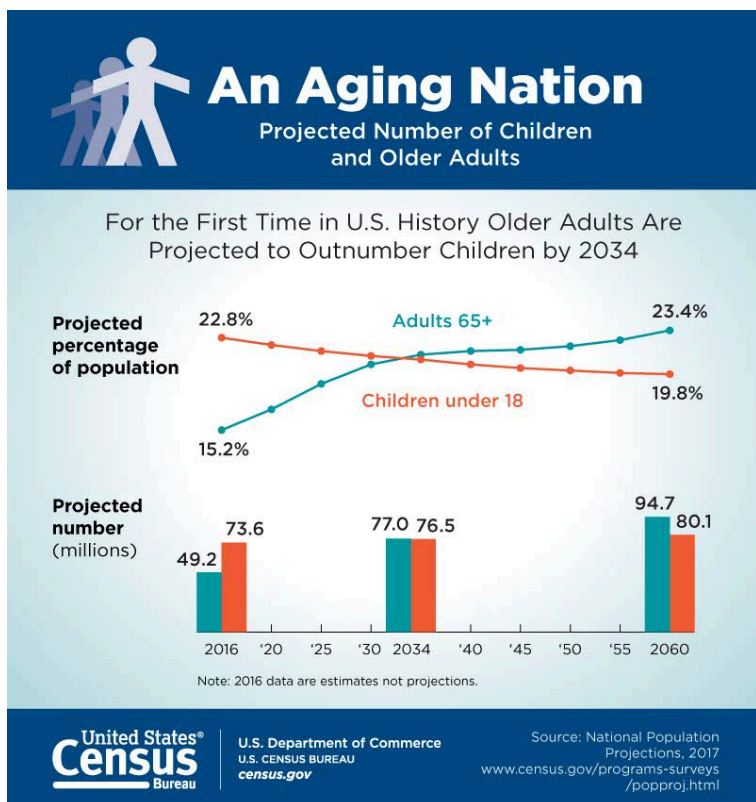conditions. Members of vulnerable populations often have

health conditions exacerbated by unnecessarily inadequate healthcare" (Waisel, 2013).

I. The Elderly

According to the U.S. Census Bureau (2018), although declining fertility plays a role, the baby boomers are the driving force behind America's aging. As one of the largest generations in the country, boomers leave a substantial imprint on the population. They swelled the ranks of the young when they were born and then the workforce as they entered adulthood. Now, boomers will expand the number of older adults as they age. Starting in 2030, when all boomers will be older than 65, older Americans will make up 21% of the population, up from 15% today. By 2060, nearly one in four Americans will be 65 years and older, the number of 85-plus will triple, and the country will add a half million centenarians (Fig. 1-3). For the older population, the biggest increase is expected in the decade from 2020 to 2030, when the population aged 65 and over is projected to increase by 18 million, from 56 million to 74 million (U.S. Census Bureau, 2018).

Figure 1-4

A Growing Population of Older Adults

An Aging Nation

Projected Number of Children and Older Adults

For the First Time in U.S. History Older Adults Are Projected to Outnumber Children by 2034

Projected percentage of population

22.8% — Adults 65+ — 23.4%

Children under 18 — 19.8%

15.2%

Projected number (millions)

	2016	'20	'25	'30	2034	'40	'45	'50	'55	2060
Adults 65+	49.2				77.0					94.7
Children under 18	73.6				76.5					80.1

Note: 2016 data are estimates not projections.

United States® Census Bureau

U.S. Department of Commerce
U.S. CENSUS BUREAU
census.gov

Source: National Population Projections, 2017
www.census.gov/programs-surveys/popproj.html

(U.S. Census Bureau, 2018)

With this swelling number of older adults, the country could see greater demands for healthcare, in-home caregiving, and assisted living facilities. In addition to the direct relationship between age and the prevalence of chronic conditions, nearly 82% of Medicare beneficiaries have at least one chronic condition, and 64% have multiple conditions (Anderson & Horvath, 2002; Wolff, 2002). Treating these conditions may require daily medications, specialized

equipment, or care coordination (U.S. Department of Health and Human Services, 2010b).

II. Race and Ethnicity

Though health indicators such as life expectancy and infant mortality have improved for most Americans, some people from racial and ethnic minority groups experience a disproportionate burden of preventable disease, death, and disability compared with non-Hispanic White people (CDC, 2022d).

Despite decades of effort, disparities persist, and changes in the racial and ethnic composition of the population have important consequences for the nation's health (CDC, 2020). Moreover, these disparities sometimes persist even when accounting for other demographic and socioeconomic factors, like age or income. For example, according to the U.S. Government Accountability Office (2021):

- Between March 2020 and June 2021, Hispanic or Latino and non-Hispanic Black people were hospitalized with COVID-19 at a rate 2.8 times higher than non-Hispanic White people when taking age into account.
- From 2011–2016, Black women living in rural counties experienced 59.3 deaths per 100,000 live births, compared to 19.7 for White women in the same counties, according to CDC data.
- In 2018, the diabetes age-adjusted mortality rate was

higher among Black people (49.7 deaths per 100,000 people) and American Indian/Alaska Native people (40.0 deaths) than White people (24.8 deaths).

- Black veterans with cancer and cardiovascular-related illnesses had lower survival rates than White veterans.

III. Socioeconomic Status

The interconnectedness of health and socioeconomic status cannot be overstated. A person's income and other measures of social status affect health directly and indirectly by impeding access to care (Barr, 2019; Khullar & Chokshi, 2018). Individuals with low socioeconomic status have greater rates of behavioral risk factors such as substance use, smoking, insufficient physical activity, and obesity (Khullar & Chokshi, 2018). People with lower socioeconomic status also experience worse care than higher-income individuals (AHRQ, 2022; Khullar & Chokshi, 2018; Ndugga & Artiga, 2021). Disparities exist in access to health insurance, general access to healthcare, and timely access to services (AHRQ, 2022). Approximately 9% of the population is uninsured (Khullar & Chokshi, 2018), creating barriers to routine preventative healthcare and challenges in coordinating care, which may result in increased visits to the emergency department by this population.
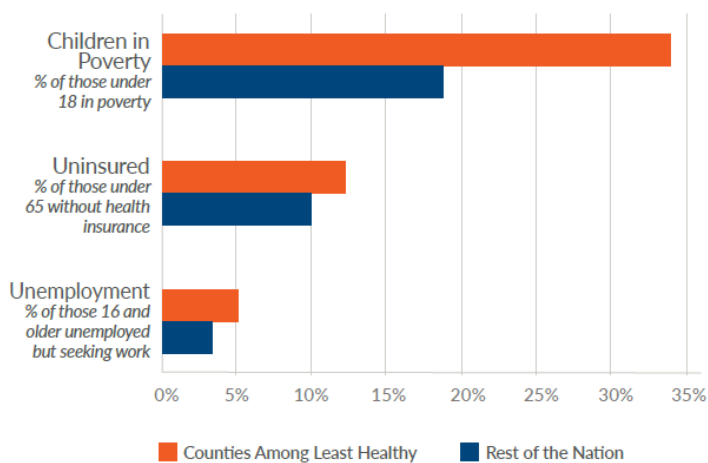
In the U.S., income-based health disparities are among the largest in the world, where adults living in poverty are five times as likely to report being in fair or poor health (Khullar

& Chokshi, 2018). Poverty affects approximately 43 million Americans and is associated with an increased risk of diseases and premature death (Office of Disease Prevention and Health Promotion [ODPHP], n.d.). The distribution of wealth in the U.S. is even more unequal than income, which plays a crucial role in intergenerational health disparities (Khullar & Chokshi, 2018). During the last two decades, the income of poor and middle Americans has decreased (Thorpe et al., 2017). The widening income gap and the percentage of children experiencing poverty are crucial socioeconomic status challenges that impact health.

Inequitable access to resources and opportunities can be caused by a variety of reasons, leading to poverty (ODPHP, n.d.). For example, according to Givens et al. (2020), counties that were among the least healthy had greater rates of poverty, uninsured people, and unemployment than the rest of the country (Fig. 1-4):

Figure 1-5

Gaps in Health Factors in the Year 2020

A horizontal bar chart comparing "Counties Among Least Healthy" (orange) and "Rest of the Nation" (dark blue):

- **Children in Poverty** — % of those under 18 in poverty: Counties Among Least Healthy ≈ 34%; Rest of the Nation ≈ 19%
- **Uninsured** — % of those under 65 without health insurance: Counties Among Least Healthy ≈ 12%; Rest of the Nation ≈ 10%
- **Unemployment** — % of those 16 and older unemployed but seeking work: Counties Among Least Healthy ≈ 5%; Rest of the Nation ≈ 3.5%

X-axis: 0% to 35%

Legend: ■ Counties Among Least Healthy   ■ Rest of the Nation

(Givens et al., 2020)

Review the full report (Givens et al., 2020): [2020 County Health Rankings Key Findings Report](#)

IV. The Uninsured

In the U.S., access to healthcare is often synonymous with having health insurance (Kirby et al., 2022). Although the rate of uninsured Americans decreased under the Affordable Care Act (Uberoi et al., 2016), there has been a recent rise in the uninsured rate again (Morenz, 2021). This increase began prior to the COVID-19 pandemic, although the virus did not help matters. From 2017 to 2019, the uninsured rate rose by 1.7%, most likely due to various policy changes to the Patient Protection and Affordable Care Act (ACA) and Medicaid

(Finegold et al., 2021). Since 2016, there has been a disturbing increasing trend in uninsured children in the U.S. The number of children who lacked consistent private or public insurance coverage increased between 2016 and 2019 (Yu et al., 2021). According to Finegold et al. (2021), when compared to other Americans, the uninsured are disproportionately likely to be African American or Latino, be young adults, have low incomes, and/or live in states that have not expanded Medicaid. Some of the other variations were due to states which decided not to expand their Medicaid under the ACA (Larson et al., 2020). Some of it is due to the variation in the availability of employer-sponsored coverage (particularly for low-wage workers) from state to state (Dworsky et al., 2022).

In 2019, 14.5% of adults aged 18–64 were uninsured. Among uninsured adults aged 18–64, the most common reasons for being currently uninsured were they perceived that they could not afford the cost of coverage, followed by not being eligible, not wanting coverage, the process of signing up was too difficult or confusing, they could not find a plan that meets their needs, or they signed up for coverage but the plan has not started yet. In 2019, the percentage of adults who were uninsured due to cost was higher among women, adults aged 50–64, and adults in fair or poor health. The percentage of adults who were uninsured due to ineligibility did not vary by age but was higher among women and adults in fair or poor health. In contrast, the percentage of adults who were uninsured because coverage was not needed or wanted was

higher among men, adults aged 18–29, and adults with excellent, very good, or good health (Cha & Cohen, 2020). Individuals without health insurance experience barriers to health care, such as not having a usual source of care and postponing or forgoing care due to cost, which may lead to negative health outcomes (Freeman et al., 2008; Tolbert et al., 2022).

Review the full data brief (Cha & Cohen, 2020): [Reasons for Being Uninsured Among Adults Aged 18–64 in the United States, 2019](#)

1.4.3 Social Determinants of Health

> **Definition:** *Social determinants of health* are "the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels" (World Health Organization, 2012).

Social determinants of health (SDOH) is a relatively new term in healthcare. Social determinants of health (SDOH) have a major impact on people's health, well-being, and quality of

life. Unfortunately, SDOH also contribute to wide health disparities and inequities. For example, people who don't have access to grocery stores with healthy foods are less likely to have good nutrition which raises their risk of health conditions like heart disease, diabetes, and obesity. This situation even lowers life expectancy relative to people with access to healthy foods. Just promoting healthy choices won't eliminate these and other health disparities. Instead, public health organizations and their partners in sectors like education, transportation, and housing must take action to improve the conditions in people's environments (U.S. Department of Health and Human Services [DHHS], n.d.)

Healthy People 2030

In 1979, the Surgeon General issued a landmark report titled "Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention" (ODPHP, 2021). A year later, in 1980, the Office of Disease Prevention and Health Promotion (ODPHP) released Healthy People 1990, which was followed in later decades by new iterations of the Healthy People initiative, each building on the last. This initiative provides 10-year, measurable public health objectives and tools to help track progress toward achieving them (ODPHP, 2021). **Healthy People 2030**, launched in August 2020, is the fifth and most current iteration of the Healthy People initiative. It builds on knowledge gained over the last 4 decades and has an

increased focus on health equity, social determinants of health, and health literacy with a new focus on well-being (ODPHP, 2021).

Five Key Areas of Social Determinants of Health

SDOH are one of three priority areas for Healthy People 2030, along with health equity (i.e., the attainment of the highest level of health for all people) and health literacy (i.e., the ability to navigate, understand, and use health information and services). Healthy People 2030 sets data-driven national objectives in the five key areas of SDOH (Fig. 1-5): economic stability, education access and quality, healthcare access and quality, neighborhood and built environment, and social and community context (CDC, 2022e).

Figure 1-6

Five Key Areas of Social Determinants of Health

(CDC, 2022e)

I. Economic Stability

In the U.S., 1 in 10 people live in poverty, and many cannot afford healthy foods, healthcare, and housing (Semega et al., 2019). Healthy People 2030 focuses on helping more people achieve economic stability. People with steady employment are less likely to live in poverty and more likely to be healthy, but many people have trouble finding and retaining a job. People with disabilities, injuries, or conditions like arthritis may be especially limited in their ability to work. In addition, many people with steady work still do not earn enough to afford the things they need to stay healthy. Employment programs, career counseling, and high-quality childcare opportunities can help more people find and retain jobs. In addition, policies to help people pay for food, housing, healthcare, and education can reduce poverty and improve health and well-being. The goal of this key area is to help people earn steady incomes that allow them to meet their health needs (DHHS, n.d.).

II. Education Access and Quality

People with higher levels of education are more likely to be healthier and live longer. Healthy People 2030 focuses on providing high-quality educational opportunities for children and adolescents and helping them do well in school. Children from low-income families, children with disabilities, and children who routinely experience forms of social discrimination — like bullying — are more likely to struggle

with math and reading. They are also less likely to graduate from high school or attend college. As a result, they are less likely to get safe, high-paying jobs and more likely to have health problems like heart disease, diabetes, and depression. In addition, some children live in places with poorly performing schools, and many families cannot afford to send their children to college. The stress of living in poverty can also affect children's brain development, making it harder for them to do well in school. Interventions to help children and adolescents do well in school and help families pay for college can have long-term health benefits. The goal of this key area is to increase educational opportunities and help children and adolescents do well in school (DHHS, n.d.).

III. Healthcare Access and Quality

Many people in the U.S. don't get the healthcare services they need (CDC, 2021b). Healthy People 2030 focuses on improving health by helping people get timely, high-quality healthcare services. About 1 in 10 people in the U.S. don't have health insurance (Berchick et al., 2018). People without insurance are less likely to have a primary care provider, and they may be unable to afford the healthcare services and medications they need. Strategies to increase insurance coverage rates are critical for making sure more people get important healthcare services, like preventive care and treatment for chronic illnesses. Sometimes people don't get recommended healthcare services, like cancer screenings,

because they don't have a primary care provider. Other times, it's because they live too far away from healthcare providers who offer them. Interventions to increase access to healthcare professionals and improve communication — in person or remotely — can help more people get the care they need. The goal of this key area is to increase access to comprehensive, high-quality healthcare services (DHHS, n.d.).

IV. Neighborhood and Built Environment

The neighborhoods people live in have a major impact on their health and well-being (CDC, 2018). Healthy People 2030 focuses on improving health and safety in the places where people live, work, learn, and play. Many people in the U.S. live in neighborhoods with high rates of violence, unsafe air or water, and other health and safety risks. Racial/ethnic minorities and low-income people are more likely to live in places with these risks. In addition, some people are exposed to things at work that can harm their health, like secondhand smoke or loud noises. Interventions and policy changes at the local, state, and federal levels can help reduce these health and safety risks and promote health. For example, providing opportunities for people to walk and bike in their communities — like by adding sidewalks and bike lanes — can increase safety and help improve health and quality of life. The goal of this key area is to create neighborhoods and environments that promote health and safety (DHHS, n.d.).

V. Social and Community Context

People's relationships and interactions with family, friends, co-workers, and community members can have a major impact on their health and well-being. Healthy People 2030 focuses on helping people get the social support they need in the places where they live, work, learn, and play. Many people face challenges and dangers they can't control — like unsafe neighborhoods, discrimination, or trouble affording the things they need. These challenges can have a negative impact on health and safety throughout life. Positive relationships at home, work, and in the community can help reduce these negative impacts. But some people — like children whose parents are in jail and adolescents who are bullied — often don't get support from loved ones or others. Interventions to help people get the social and community support they need are critical for improving health and well-being. The goal of this key area is to increase social and community support (DHHS, n.d.).

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You

can view it online here:
https://pressbooks.uwf.edu/
ushealthcaresystem/?p=40#h5p-31

Click here to move on to the Chapter Summary.

1.5 CHAPTER SUMMARY

The United States (U.S.) healthcare system is highly complex, not only due to the country's large population and size but also because there are multiple insurers and delivery systems. Regulatory systems are divided between federal, state, and local governments and many 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 programs through its Centers for Medicare and Medicaid Services. Other key agencies include the National Institutes of Health, the Centers for Disease Control and Prevention, the Veterans Health Administration, and the Food and Drug Administration. In addition, private sector stakeholders play a strong role in the system. The private sector led the development of the health system before the Second World War, with the major federal government health insurance programs, 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, most Americans receive coverage from private insurance, which is mostly 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 publicly and privately funded insurance coverage expansions.

Achieving wellness requires a person to have physical, emotional, intellectual, spiritual, social, and environmental health. The impact of our healthcare choices can be seen in terms of mortality rate and productivity. For example, the top leading cause of mortality in 2020 was heart disease, and being unhealthy can lead to absenteeism, disability, or reduced work output. Health indicators are used to describe and monitor a population's health status. Three common health indicators include life expectancy, deaths from cancer, and infant mortality. In 2020, life expectancy at birth in the United States was 77.0 years, cancer was the second leading cause of death, and the infant mortality rate was 5.42 deaths per 1,000 live births. In terms of healthcare, there are clear distinctions between medical practitioners and public health professionals. Medical practitioners treat individual patients and teach people how to care for themselves. In contrast, public health professionals work to prevent the spread of communicable diseases, manage public health hazards, and respond to natural or man-made disasters.

Even though life expectancy and overall health have improved in recent years for most Americans, not all older adults benefit equally. Vulnerable populations include patients who are elderly, racial or ethnic minorities, elderly,

socioeconomically disadvantaged, uninsured or those with certain medical conditions. By 2060, nearly one in four Americans will be 65 years and older creating greater demands for healthcare, in-home caregiving, and assisted living facilities. Health disparities still exist for some people from racial and ethnic minority groups. The least healthy counties in the U.S. have greater poverty rates, uninsured people, and unemployment than the rest of the country. Social determinants of health, or the conditions in which people are born, grow, live, work, and age, are one of three priority areas for Healthy People 2030, along with health equity and health literacy.

Key terms included in this chapter are also listed in the Glossary at the end of the book.

Click here to view the references and attributions from Chapter 1.

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Click here to move on to Chapter 2: Delivery Systems.

CHAPTER 2: DELIVERY SYSTEMS

Learning Objectives

- Examine the scope of services and the facility classifications for inpatient care.
- Examine the scope of services and the models for outpatient care.
- Explain the unique characteristics of post-acute care and differentiate it from other parts of the healthcare continuum.
- Summarize the continuum of long-term care.
- Describe the objectives of both hospice and palliative care.

Chapter Sections:

2.1 INPATIENT CARE

2.1.1 Definition & Services

I. Definition

Inpatient care refers to medical care that occurs when a patient is admitted to the hospital. According to the American Hospital Association (AHA), hospitals are licensed institutions with at least six beds whose primary function is to provide diagnostic and therapeutic patient services for medical

conditions; they have an organized physician staff, and they provide continuous nursing services under the supervision of registered nurses (Centers for Disease Control and Prevention [CDC], 2022a). The World Health Organization (WHO) considers an establishment a hospital if it is permanently staffed by at least one physician, can offer inpatient accommodation, and can provide active medical and nursing care (CDC, 2022a).

II. Services

Inpatient services are services that involve an overnight stay or prolong the stay of a patient in a licensed healthcare facility. Historically, in the United States (U.S.), inpatient services are provided by hospitals. As the healthcare system evolved, hospitals became the backbone of healthcare delivery (Shi & Singh, 2012). Although the original focus for hospitals was inpatient services, the need for cost containment and more patients preferring services outside the hospital led to more outpatient services being offered by hospitals. Hospitals have advanced in the types of care offered and the technology utilized. Inpatient services typically focus on acute care, which includes secondary and tertiary care levels. Secondary care is "specialist care provided on an ambulatory or inpatient basis, usually following a referral from primary care" (World Health Organization, 2023). Tertiary care includes "highly specialized services in ambulatory and hospital settings or in a facility that

has personnel and facilities for advanced medical investigation and treatment" (World Health Organization, 2023).

Inpatient care is very expensive and, throughout the years, has been targeted for cost containment measures. Hospitals have begun offering more outpatient services that do not require an overnight stay and are less financially taxing on the healthcare system. U.S. healthcare expenditures have increased as part of the gross domestic product, and consequently, more cost-containment measures have evolved. Outpatient services have become more popular because they are less expensive and are preferred by patients.

Hospitals, the most common healthcare facility for inpatient services, are very distinctly divided into well-defined spaces known as units (Dean et al., 2021). Each hospital is comprised of a wide range of services and functional units. These include diagnostic and treatment functions, such as clinical laboratories, imaging, emergency rooms, and surgery. This diversity is reflected in the breadth and specificity of regulations, codes, and oversight that govern hospital construction and operations. In addition to the wide range of services that must be accommodated, hospitals must serve and support many different users and stakeholders.

2.1.2 General Hospital Classifications

Hospitals may be classified by type of service (e.g., Children's

hospital), ownership (for profit or not for profit), size (number of beds), and length of stay (e.g., long-term care hospitals). 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 the type of community hospitals based on the services provided (National Center for Health Statistics [NCHS], 2017).

"The American Hospital Association conducts an annual survey of hospitals in the U.S. The infographic below, published in 2022, presents some of the data from the 2020 AHA Annual Survey" (American Hospital Association, 2022).

Review Infographic (American Hospital Association, 2022): Fast Facts on U.S. Hospitals – 2022

Federal hospitals are those operated by the federal government and include hospitals in the Veterans Affairs and Indian Health Service. 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 U.S. providing both general and 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 gynecology;

orthopedics; pediatrics; 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.

2.1.3 Community Hospitals

The AHA classifies all community hospitals by ownership: nonprofit, for-profit, and state and local government (NCHS, 2017). Nonprofit hospitals are controlled by nonprofit 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

Key Terms

For-Profit. A for-profit organization operates with the goal of making money. Most businesses are for-profits that serve their customers by selling a product or service. The business owner earns an

income from the for-profit and may also pay shareholders and investors from the profits.

Nonprofit. A nonprofit organization qualifies for tax-exempt status by the IRS because its mission and purpose are to further a social cause and provide a public benefit. Nonprofit organizations

beds in the largest category (NCHS, 2017). A government or nonprofit 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). Two other categories of of community hospitals are the critical access hospital and the specialty hospital.

I. Critical Access Hospitals

The critical access hospital (CAH) 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, be

located 35 miles from another hospital (or 15 miles in mountainous terrain), and have an average length of stay of 96 hours or less per patient (Joynt et al., 2011). These hospitals receive retrospective cost-based reimbursement rather than prospective reimbursement,

include hospitals, universities, national charities, and foundations.

which has helped them stay financially solvent (Joynt et al., 2011). Under cost-based reimbursement, the payer agrees retrospectively to reimburse the provider for the costs incurred in providing services to the insured population. A Prospective Payment System (PPS) is a method of reimbursement in which Medicare payment is made based on a predetermined, fixed amount. The CAH designation was established so that small rural hospitals would continue to provide basic inpatient and emergency services close to home for the rural population. The program has helped maintain 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.

II. Specialty Hospitals

Specialty hospitals 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, orthopedic, or general surgical patients (Al-Amin et al., 2010). Small orthopedic, cardiac, and general surgical specialty hospitals are a newer phenomenon (Siddiqui et al., 2014). Many specialty hospitals are physician-owned (Siddiqui et al., 2014).

2.1.4 Emergency Care

Definition: The National Hospital Ambulatory Medical Care Survey, (NHAMCS) defines an **emergency department** as a hospital facility that is staffed 24 hours a day, 7 days a week, and provides unscheduled outpatient services to patients whose condition requires immediate care (CDC, 2022b).

Emergency departments are a major part of the US healthcare safety-net (Mortensen, 2014; Rhodes et al., 2013). Emergency departments in hospitals that receive payment from Medicare are required by the Emergency Medical Treatment & Labor Act (EMTALA) to provide care to anyone needing emergency treatment. This legislation allows underinsured and uninsured persons access to the emergency department 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. However, they may be unable to do so and the hospital may write off the payment as **charity care** or **bad debt**, which are 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.

Emergency departments tend to be overused for non-urgent and 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 emergency department 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 emergency departments for specialist services (Nourazari et al., 2016).

Emergency departments are also used for urgent, but not emergent, problems that could be seen in urgent care centers (Borkowski, 2012).

Knowledge Check

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Click here to move on to 2.2 Outpatient Care.

2.2 OUTPATIENT CARE

Sections:

Outpatient services occur in a facility or setting where there is no need for an overnight stay. The types of procedures and tests offered might include wellness and prevention services, such as annual exams; diagnostic services, such as lab tests and imaging scans; treatment, such as day surgeries or chemotherapy; and rehabilitation, such as physical therapy or addiction treatment. Because no overnight stay is involved, outpatient services usually cost less (George et al., 2021). Some facilities specialize in one kind of treatment or procedure, such as an orthopedic surgery center, although many can be

provided in one place. Three types of outpatient care include primary care, ambulatory surgical care, and urgent care.

2.2.1 Primary Care

I. Description

> **Definition:** **Primary care** is "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" (Institute of Medicine [IOM], 1994, p. 15).

Primary care is the entry point into the healthcare system and is one of the most utilized outpatient services. Primary care clinics are the point of delivery of individual care based on care over time and are not disease-oriented but focus on preventive and sick visits. Primary care providers see patients who do not require immediate medical care for life-threatening conditions.

Primary care services cover a range of prevention, wellness, and treatment for common illnesses. Primary care providers

include doctors, nurses, nurse practitioners, and physician assistants. They often maintain long-term relationships with you and advise and treat you on a range of health-related issues. They may also coordinate your care with specialists.

The four pillars of primary care, represented in Figure 2-1, are (Starfield, 1998):

1. A patient's first contact with the healthcare system
2. Continuity of care over time
3. Comprehensiveness (i.e., concern for the whole patient rather than a disease or part of the patient)
4. Coordination of care

Figure 2-1

The Four Pillars of Primary Care
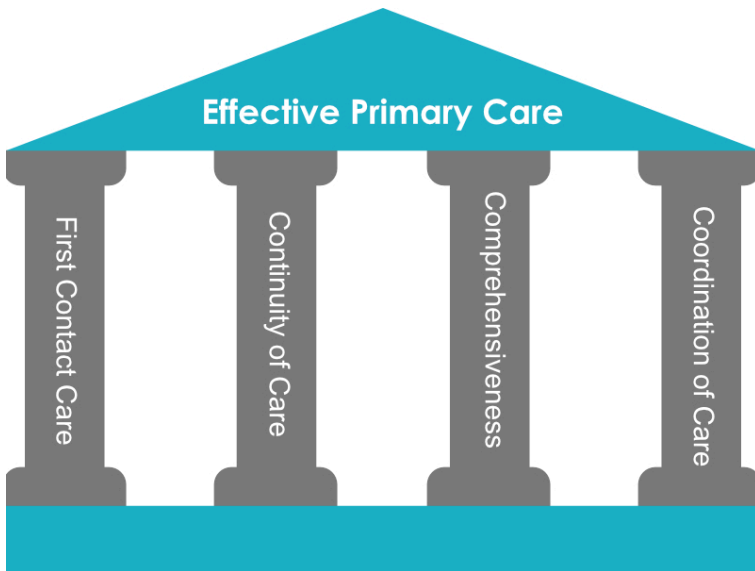
(Starfield, 1998)

II. Venues

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 center, 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 Veterans Health Administration), prisons, the Indian Health Service, and centers 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). In addition, many 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, and hospital care (Bodenheimer & Pham, 2010). Finally, workplace wellness programs and retail clinics provide some primary care services by providing screening, health promotion, and basic prevention services (Baicker et al., 2010; RAND Corporation, 2010).

Retail clinics located in pharmacies, general stores, and department stores, have emerged as alternative sites for primary care (Hoff & Prout, 2019). These clinics are operated

mainly 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 either planning to enter the retail clinic market or have already done so. A positive feature of retail clinics is that they have walk-in availability, extended hours compared to physicians' offices, and convenient access points (Hoff & Prout, 2019). They tend to be staffed by non-physician practitioners, such as NPs or PAs. Retail clinics treat a limited number of conditions and needs, such as skin conditions, sore throats, pregnancy testing, infections, diabetes screening, and immunizations (Hoff & Prout, 2019).

The following two models of care are being employed to increase efficiencies in primary care delivery: patient-centered medical homes and accountable care organizations.

1. **Patient-centered medical homes (PCMHs)** have several 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 programs to shift patients into medical homes, funding new PCMH models of care, and supporting the information technology needed for care coordination in PCMHs (Hoff et al., 2012).

2. **Accountable care organizations (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 (Centers for Medicare & Medicaid Services [CMS], 2023). ACOs aim to ensure patients receive the proper 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. In contrast, PCMHs have no direct relationship between payment and membership. When an ACO succeeds in both efficiency and high quality, it will share in the savings. ACOs were initiated by the Patient Protection and Affordable Care Act (ACA). They were first implemented in the Medicare shared savings program, but the ACA also supports pilot programs to extend the model to private payers and

Medicaid.

2.2.2 Ambulatory Surgery Centers

Definition: An ***ambulatory surgical center*** is an outpatient facility that operates primarily to provide surgical services to patients who do not require overnight hospital care.

Improvements in surgical equipment, techniques, and anesthesia 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 same-day surgery departments or free-standing ambulatory surgical centers (Munnich & Parente, 2014). In 2014, 66% of all surgeries were in the outpatient (i.e., ambulatory) setting (Rechtoris, 2017). This number increased significantly from 1981, when outpatient surgeries were only 19% of all surgeries (Munnich & Parente, 2014). Common

surgeries and procedures performed in the ambulatory setting include those for back problems, cataracts, cancers, colonoscopy, diverticula, inguinal hernia repair, gallstones, and many orthopedic problems (Cullen et al., 2009). Surgeries not done on an outpatient basis are those with high risk, long duration, or 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 primarily an outpatient procedure (Meissner, 2015). Even hip replacements are performed on an outpatient basis (Cluett, 2023).

Compared to hospital-based surgical centers, ambulatory surgical centers (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). For example, there is some evidence that ASCs have lower costs and similar health outcomes, such as mortality rates (Chukmaitov et al., 2008; Hollenbeck et al., 2015; Munnich & Parente, 2014). 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 centers (Hollenbeck et al., 2010; Koenig & Gu, 2013; Plotzke & Courtemanche, 2011).

2.2.3 Urgent Care

Outpatient clinics and urgent care facilities often serve as alternative places to receive healthcare when individuals cannot get to a hospital. During a public health emergency, these settings may see an increase in the number of patients they treat.

Urgent care is provided outside the emergency department setting in **urgent care centers (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 (American College of Emergency Physicians [AECP], 2017; Le & Hsia, 2016). The scope of services in these centers 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 emergency department (ACEP, 2017; Le & Hsia, 2016). Services focus on acute episodic care including care for minor illnesses and emergencies such as upper respiratory infections, urinary tract infections, backaches, sprains, strains, lacerations, burns, and minor fractures (Corwin et al., 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 with around 400–500 new centers opening each 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 emergency department costs, and long emergency department waiting times (Stoimenoff & Dunn, 2018; Villasenor & Krouse, 2016). The ability to get same-day test results and medications also makes 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 with more urgent care alternatives to emergency departments have lower emergency department use for low acuity diagnoses (Llovera et al., 2019).

Knowledge Check

Match each statement to the correct center to complete the sentences.

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Click here to move on to 2.3 Post-Acute & Long Term Care (PALTC).

2.3 POST-ACUTE & LONG-TERM CARE (PALTC)

Sections:

2.3.1 Definitions

According to The Society for Post-Acute and Long-Term Care Medicine (2022), the following terms are associated with the post-acute and long-term care (PALTC) continuum:

Assisted living is a living environment focused on maintaining independence in a supervised setting. Many

assisted living residents live in communities with apartments and amenities such as group dining and medication assistance. Assisted living is not regulated by the Federal government.

Geriatrics is the branch of medicine dealing with the care of patients 65 and older.

Hospice care is focused on providing comfort and pain control versus extending one's life for patients expected to live six months or less.

Inpatient rehabilitation facility is a specialized hospital or unit focused on delivering intensive rehabilitative services to patients with medically complex diagnoses. It is intended for those likely to benefit from and who can tolerate a plan of care that includes more than three hours of therapy each day.

Long-term care is traditionally provided in nursing homes, providing patients who can no longer be cared for at home or in assisted living with support for both daily living activities and complex medical problems.

Long-term care hospital is an inpatient facility for those demonstrating a great deal of medical complexity and requiring an extended period of medical care and hospitalization. These patients are contending with multiple acute and/or chronic comorbidities, necessitating a higher level of care.

Palliative care focuses on managing the chronic conditions of a patient with the goal of providing comfort and the highest quality of life possible.

Post-acute care typically refers to care provided to patients recently released from the hospital and can take place in many settings, including nursing homes and rehabilitation centers.

Skilled nursing facility care is care ordered by a physician, delivered by skilled nursing or therapy staff, and paid for by Medicare Part A for a fixed period of time (up to 100 days). Skilled care takes place in a nursing home and may or may not be the same as post-acute care.

The two sections below (2.3.2 and 2.3.3) review two levels of care: Post-acute care and long-term care. Examine how some facilities, such as a skilled nursing facility, can be utilized in both levels of care.

2.3.2 Post-Acute Care

Post-acute care (PAC) is a broad term that covers a wide variety of service offerings and settings. In a review of post-acute practices, Wang et al. (2019) noted that in the United States the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), and the American Healthcare Association (AHA) consider PAC to be:

Integrated inpatient care is directed at persons with all acute illnesses, accidental injuries, or serious diseases. It involves goal-directed treatment, does not depend on advanced technology, testing, or complex diagnostic procedures, and provides patients with alternatives to acute inpatient treatment after their acute conditions have stabilized by dealing with one or more specific, complex medical conditions or providing complex technical treatment.

The goal of returning patients back to the highest level of function possible is what sets PAC apart from treatment in other phases of the continuum. This goal requires integration or partnership with other acute and post-acute providers to ensure patients are placed in the proper care setting based on their individual needs. These needs are primarily defined as rehabilitative or palliative in nature following a stay in an acute care setting (Medicare Payment Advisory Commission [MedPAC], 2020). As with health services in general, PAC services exist along a continuum defined by the medical necessity for care the patients require. Post-acute care services are delivered in **long-term acute care hospitals, rehabilitation facilities, skilled nursing facilities, and home and outpatient settings.**

I. Long-Term Care Acute Care Hospitals

Most people who need inpatient hospital services are admitted to an acute-care hospital for a relatively short stay. However, some people may need a longer hospital stay. **Long-term acute care hospitals (LTACH)** are certified as acute-care hospitals, but LTACHs focus on patients who, on average, stay more than 25 days. Many of the patients in LTACHs are transferred there from an intensive or critical care unit. LTACHs specialize in treating patients with more than one serious condition but who may improve with time and care

and return home. LTACHs generally provide services like respiratory therapy, head trauma treatment, and pain management (Centers for Medicare & Medicaid Services [CMS], 2019).

The goals for the LTACH setting are to rehabilitate patients to a sufficient extent so they may be transitioned to another level of PAC or to provide long-term services (potentially into perpetuity) for those requiring it. Therefore, admission is based on the complexity of the patient's needs. Specifically, patients must have a level of medical or respiratory complexity requiring daily physician oversight and intervention. Typically, patients in this setting are ventilator dependent and receive various types of intravenous therapies (e.g., dialysis, antibiotics), nutritional support, external telemetry monitoring, and wound care management. Due to this complex mix of care, patients receive 24-hour nursing care, and all providers are required to have advanced cardiovascular life support (ACLS) training. Given all the potential medical and physical challenges for patients admitted to LTACHs, the average length of stay is typically greater than 25 days.

II. Rehabilitation Facilities

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 orthopedic replacement surgeries such as

hip or knee. Rehabilitation settings include outpatient centers, inpatient rehabilitation departments, freestanding rehabilitation hospitals, departments in subacute care facilities and nursing homes, and home care (Shi & Singh, 2019). However, the proportion of rehabilitation services that occurs in each of these settings is unknown.

Inpatient rehabilitation facilities (IRFs) are specialized hospitals or units focused on the delivery of intensive rehabilitative services to patients with medically complex diagnoses. It is intended for those who are likely to benefit from, and can tolerate, a plan of care that includes more than three hours of therapy each day. IRF teams focus on returning patients to their highest level of function following a major illness, accident, or injury. IRF care is delivered by multidisciplinary teams and includes physical therapists, speech-language pathologists, and occupational therapists who work together with physicians, nurses, pharmacists, and other care team members to achieve this goal. Patients in IRFs require 24-hour medical and nursing observation during their stay. Attending physicians specializing in physical medicine and rehabilitation (e.g., Physiatrists) lead the IRF care teams and are on hand to manage any unforeseen medical issues that arise during a patient's stay.

III. Skilled Nursing Facilities

Skilled nursing facilities (SNFs) provide services similar to IRFs but do so in a more home-like, less intensive setting. These facilities are licensed by the states to ensure a safe and suitable environment is maintained for those receiving care. SNF patients typically require more mild or moderate levels of care and receive one to two different types of therapy during their stay. Before admission, SNF patients must also complete a minimum three-night stay in an acute care facility. The key criteria for choosing a SNF is for caregivers to assess whether a patient is ready to return to a more independent environment. They may no longer require the services of an inpatient hospitalization, but they are not yet ready to take on their own care at home. For example, following a stroke or musculoskeletal injury, a patient (and their caregiver) may not feel confident in their ability to complete activities of daily living (e.g., dressing, stair climbing, medication management). They don't necessarily require daily physician or nursing care, but they still need some clinical support and additional therapeutic support before they are ready for their return home. A stay in a skilled nursing facility is designed to assist the patient as they gain the functional capability they need for a successful return to more independent living. The treatment received in the SNF serves as a means to bridge the gaps in function that remain.

Upon admission to a SNF, patients receive a physical

evaluation from an attending physician and therapists. From this evaluation, a treatment plan is established. Like IRFs, the care is delivered in a multidisciplinary fashion, but it may not be as comprehensive and likely does not include the same level of technology. Patients work on activities of daily living to prepare them for their ultimate return to their home setting. Dressing, bathing, eating, and other routine activities are simulated to help patients compensate for any long-term deficits they may be experiencing due to their illness.

Table 1 compares the description, treatment, providers, and length of service for three types of post-acute care facilities:

Table 1 Post-Acute Care Facilities

	Inpatient Rehabilitation Facility (IRF)	Long-Term Acute Care Hospital (LTACH)	Skilled Nursing Facility (SNF)
Description	Resource-intensive inpatient environment Patients receive intensive rehabilitation therapy Interdisciplinary care	Medically complex patients who: -are unable to participate in functional therapy -with care, may be able to return home	Patients with moderate impairment requiring skilled nursing services and limited therapy services Requires a minimum stay in an acute care setting prior to admission
Treatment	Upwards of 3 hours daily Therapy focuses on function for daily activities, such as: -mobility -memory -speech	24-hour medical management, such as: -wound care -IV antibiotics -frequent suctioning	Regular medical management, such as: -IV therapy -dialysis support -infectious disease -management -less intense/ frequent -rehabilitation services

	Inpatient Rehabilitation Facility (IRF)	Long-Term Acute Care Hospital (LTACH)	Skilled Nursing Facility (SNF)
Providers	Physician/ physiatrist 24-hour RN coverage Interdisciplinary therapy team	Physician 24-hour ACLS-certified RNs Specialty therapists Case manager	Non-daily physician supervision RN coverage 8 hours every 24-hour period CNAs provide nursing support
Length of Service	10-15 days	20-30 days	14-21 days

IV. Home and Outpatient Settings

The PAC phase of the larger continuum of care goes beyond inpatient admissions to IRFs, LTACHs, and SNFs. Patients often continue to need care to help them maintain the gains they have achieved and to continue making functional improvements. Following discharges to SNFs, the largest volume of PAC patients receive some level of service in their homes through a **Home Health Agency (HHA)**. This group includes patients returning home following a stay in a clinical setting (e.g., hospital, LTCH, IRF, SNF) but who still require additional follow-up and treatment. Many patients accessing home healthcare might also have received care in ambulatory

(i.e., outpatient) surgical settings. Since 2012, many orthopedic procedures have transitioned from traditional hospital surgical departments to ambulatory surgical centers. As a result, many patients find themselves completing their post-surgical recovery and associated therapy outside a traditional clinical environment. Home health providers are available to ensure these patients achieve the desired outcomes. According to a recent study published by United Health Group (2020), it is estimated that more than 50% of all orthopedic hip and joint replacements will be performed in an ambulatory setting, which increases the utilization of services provided by HHAs. This level of care is offered for more than post-surgical patients, and more than 11,300 HHAs provide support for homebound patients requiring wound treatment/management, help with assistive devices, IV drug therapies, and many other conditions (MedPAC, 2021).

Like the other levels of PAC, the amount of care a patient receives from an HHA is driven by their unique needs. HHAs typically provide service from one to three times per week for those who need it. Services are provided by therapists, nurses, personal care technicians, social workers, and even physicians in some cases. The primary goals for care from an HHA are to educate the patient to care for themselves and to feel confident with their functional independence following an illness, accident, or injury.

Non-hospitalized patients who can to travel from their homes, and require one to two different treatment modalities,

can receive care in an outpatient or ambulatory setting. These encounters typically involve either therapy (e.g., physical therapy, occupational therapy, speech-language pathology), diagnostic imaging, pain management, joint protection, injury prevention, or some combination of services. Outpatient therapy is provided across a wide variety of venues, including nursing homes, hospital outpatient departments, physicians' offices, and comprehensive outpatient rehabilitation facilities, and by HHA and private practice therapists (MedPAC, 2021).

2.3.3 Long-Term Care

Long-term care (LTC) involves a variety of services designed to meet a person's health or personal care needs during a short or long period of time. These services help people live as independently and safely as possible when they can no longer perform everyday activities independently. Long-term care is provided in different places by different caregivers, depending on a person's needs. Most long-term care is provided at home by unpaid family members and friends. However, it can also be given in a facility such as a nursing home or in the community, for example, in an adult day care center (National Institute on Aging, 2017a).

The Patient Protection and Affordable Care Act uses the term **long-term services and supports** (LTSS) and defines the term to include **home and community-based services and facility-based settings.** This broad range of personal,

social, and medical services is provided in a multitude of locations, including private homes, adult day-care settings, residential care/assisted living facilities, and nursing homes. Most LTSS is delivered by unpaid family or friends, many of whom struggle to balance their care activities with employment and other family responsibilities (Spillman et al., 2014). This type of care is typically referred to as informal (i.e., unpaid) care.

However, paid LTSS provided by paraprofessionals is becoming increasingly important as the availability of family caregivers shrinks. Coming generations of older adults will have fewer children to provide care for, and more women in their 50s and 60s, who provide much of the care received by older adults, will work outside the home. LTSS encompasses a variety of health, health-related, and social services that assist individuals with functional limitations. LTSS includes assistance with activities of daily living (ADLs) such as eating, bathing, and dressing and instrumental activities of daily living (IADLs) such as housekeeping and money management over an extended period. The goal of LTSS is to facilitate functioning among people with disabilities.

I. Home and Community-Based Services

Home and community-based services (HCBS) are types of person-centered care delivered in the home and community.

HCBS allow people with significant physical and cognitive limitations to live in their home or a home-like setting and remain integrated with the community. Services include skilled care, personal care (dressing, bathing, toileting, eating, transferring to or from a bed or chair, etc.), home-delivered meals, transportation and access, supported employment, home repairs and modifications, home safety assessments, and information and referral services (CMS, 2021). Three types of home and community-based services include **home healthcare, adult day care, and the elderly nutrition program.**

Home healthcare

Home healthcare is a formal, regulated program of care delivered in the home. It can include a range of services provided by skilled medical professionals, including skilled nursing care, physical therapy, occupational therapy, and speech therapy. In addition, home healthcare can also include skilled, non-medical care, such as medical social services or assistance with daily living from a highly qualified home health aide. To be eligible for the home health benefit under Medicare, the patient must be under a doctor's care, with a plan of care that the doctor regularly reviews. The recipient must be homebound and unable to leave the home unaided without the possibility of risk. Sources for home

healthcare funding include Medicare, Medicaid, the Older Americans Act, the Veterans Administration, and private insurance.

Adult day care

Adult day care is a group program designed to meet the needs of functionally and/or cognitively impaired adults and provide respite for family caregivers. Adult day care centers offer a wide array of services that range from basic health services, meals, and activities to intensive health services for those who might otherwise have to be in a skilled nursing center. In general, there are three main types of adult day care centers: those that focus primarily on social interaction, those that provide medical care, and those dedicated to Alzheimer's care. Medicare does not cover adult day care. Medicaid will pay some amount toward adult day care in nearly every state, though the amount is often limited. Long-term care insurance may cover adult day programs, and some financial assistance may be available through a federal or state program like the Older Americans Act or Veterans Health Administration.

The elderly nutrition program

The Elderly Nutrition Program (ENP) was designed specifically to address problems of inadequate dietary intake and social isolation among the elderly. ENP is authorized by and receives funding under the Older Americans Act

Nutrition Program (Congressional Research Service [CRS], 2014). Additional funding is provided through block grants, Medicaid waivers, and private donations. Services include both home-delivered meals (commonly referred to as Meals on Wheels) and healthy meals served in group settings, such as senior centers and faith-based locations for people aged 60 and older (CRS, 2014). In addition, the programs provide a range of services, including nutrition screening, assessment, education, and counseling. Nutrition services also provide an important link to other supportive in-home and community-based supports such as homemaker and home-health aide services, transportation, physical activity, and chronic disease self-management programs, home repair, and fall prevention programs.

II. Facility-Based Settings

At some point, support from family, friends, and local programs may not be enough. People who require help full-time might move to a residential facility that provides many or all of the long-term care services they need. Facility-based long-term care services include: **board and care homes, assisted living facilities, nursing homes, and continuing care retirement communities.** Some facilities have only housing and housekeeping, but many also provide personal care and medical services. Many facilities offer special programs for

people with Alzheimer's disease and other types of dementia (National Institute on Aging, 2017b).

Board and care homes

Board and care homes, also called residential care facilities or group homes, are small private facilities, usually with 20 or fewer residents. Rooms may be private or shared. Residents receive personal care and meals and have staff available around the clock. Nursing and medical care usually are not provided on-site (National Institute on Aging, 2017b).

Assisted living

Assisted living is for people who need help with daily care but not as much help as a nursing home provides. Assisted living facilities range in size from as few as 25 residents to 120 or more. Typically, a few **levels of care** are offered, with residents paying more for higher levels of care. Assisted living residents usually live in their own apartments or rooms and share common areas. They have access to many services, including up to three meals a day; assistance with personal care; help with medications, housekeeping, and laundry; 24-hour supervision, security, and on-site staff; and social and recreational activities, with exact arrangements varying from state to state (National Institute on Aging, 2017b).

Although assisted living costs less than nursing home care, it is still fairly expensive. Because there can be extra fees for

additional services, it is very important for older persons to find out what is included in the basic rate and how much other services will cost. Primarily, older persons or their families pay the cost of assisted living. Some health and long-term care insurance policies may cover some of the costs associated with assisted living. In addition, some residences have their own financial assistance programs. The federal Medicare program does not cover the costs of assisted living facilities or the care they provide. However, according to Koop (2022):

> Most states do offer some degree of financial assistance for assisted living through Medicaid programs. However, it's important to note that Medicaid does not cover the cost of basic room and board the way it does for residents of nursing homes. The exact services that Medicaid covers within assisted living vary by state and the specific program a senior applies for. All states offer assistance paying for some degree of personal care services (ADLs), but the ways in which those services are administered differ widely. For example, some state Medicaid programs provide eligible seniors with personal care assistance but not in an assisted living residence. The fundamental services that most Medicaid programs will pay for in an assisted living facility include:
>
> - Case management
> - Personal Care services
> - Homemaker services (e.g., meal preparation, laundry, light housekeeping)
> - Transportation
> - Personal emergency response systems

Nursing homes

Nursing homes provide a wide range of health and personal care services. Their services focus on medical care more than most assisted living facilities. These services typically include nursing care, 24-hour supervision, three meals a day, and assistance with everyday activities. Rehabilitation services, such as physical, occupational, and speech therapy, are also available. Some people stay at a nursing home for a short time after being in the hospital. After they recover, they go home. However, most nursing home residents live there permanently because they have ongoing physical or mental conditions that require constant care and supervision (National Institute on Aging, 2017b).

Rehabilitation is a key component for short-term stays funded primarily through Medicare or commercial insurers. Medicare does not pay for long-term or permanent stays in nursing homes. On the other hand, Medicaid covers both short-term stays and extended stays for seniors with limited assets and low income who have a medical need for this high level of care. This coverage and the eligibility requirements vary by state. Nursing homes may provide only long-term care, only short-term care for rehabilitation purposes, or both. In order to be certified by the Centers for Medicare & Medicaid Services, these facilities must meet strict criteria and are subject to periodic inspections to ensure that quality standards are being met.

Murphy (2021) states, "overall, there is a fair degree of overlap between skilled nursing facilities and nursing homes. However, the differences between them can be especially confusing, considering that skilled nursing is available in a nursing home setting. **In general, a SNF is a short-term facility with medical specialists dedicated to various forms of rehabilitation, while a nursing home focuses on long-term care**."

Continuing care retirement communities

Continuing care retirement communities (CCRCs), also called life care communities, integrate different levels of service in one location. Many offer independent housing (i.e., houses or apartments), assisted living, skilled nursing care, and memory care all on one campus. Residents can move from one area to another based on the level of service needed and stay within the CCRC. For example, residents who can no longer live independently move to the assisted living facility or sometimes receive home care in their independent living unit. If necessary, they can enter the CCRC's nursing home or memory care unit. A CCRC is a good option for seniors who want to age in place but might not have the support system to do so.

CCRCs are paid for through private financing unless services are received in a Medicare-certified skilled nursing facility. "The chief benefit of CCRCs is that they provide a wide range

of care, services and activities in one place, offering residents a sense of stability and familiarity as their abilities or health conditions change. But that comes at a cost as most communities charge a substantial entry fee" (AARP, 2022). "The average initial payment is about $402,000, but the fees can range widely, from $40,000 to more than $2 million, according to National Investment Center for Seniors Housing & Care, which tracks costs at some 1,100 CCRCs in 99 major U.S. markets" (AARP, 2022). In addition to this entrance fee (which can be nonrefundable should the resident move out or pass away), residents are required to pay a monthly fee based on amenities and the type of contract. If a community isn't financially stable, there is a risk of losing the entire investment, possibly leaving aging residents financially and medically exposed at the end of their lives.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://pressbooks.uwf.edu/ushealthcaresystem/?p=443#h5p-28

[Click here to move on to 2.4 Palliative & Hospice Care.](#)

2.4 PALLIATIVE & HOSPICE CARE

Sections:

2.4.1 Palliative Care

According to the National Institute on Aging (2021), many Americans die in facilities such as hospitals or nursing homes, receiving care inconsistent with their wishes. All adults, especially older adults, need to plan ahead and let their caregivers, doctors, or family members know their end-of-life preferences in advance. For example, suppose an older person wants to die at home, receiving end-of-life care for pain and

other symptoms, and makes this known to healthcare providers and family. In that case, it is less likely he or she will die in a hospital receiving unwanted treatments. If the person can longer make healthcare decisions for themselves, a caregiver or family member may have to make those decisions. Caregivers have several factors to consider when choosing end-of-life care, including the older person's desire to pursue life-extending treatments, how long he or she has left to live, and the preferred setting for care. The tension involved in making these decisions can be relieved from the caregiver if the ill person has their wishes in writing.

> **Definition:** *Palliative care* is specialized medical care for people living with a serious illness, such as cancer or heart failure.

Patients in palliative care may receive medical care for their symptoms to provide comfort, along with treatment intended to cure their serious illness. Palliative care is meant to enhance a person's current care by focusing on the quality of life for them and their family. Palliative care is a resource for anyone living with a serious illness, such as heart failure, chronic obstructive pulmonary disease, cancer, dementia, Parkinson's disease, and many others. Palliative care can be helpful at any stage of illness and is best provided soon after a person is diagnosed. In

addition to improving quality of life and helping with symptoms, palliative care can help patients understand their choices for medical treatment. Finally, the organized services available through palliative care may be helpful to any older person having a lot of general discomforts and disabilities very late in life (National Institute on Aging, 2021).

A palliative care team comprises multiple professionals that work with the patient, family, and the patient's other doctors to provide medical, social, emotional, and practical support. The team comprises palliative care specialist doctors and nurses, and others such as social workers, nutritionists, and chaplains. A person's team may vary based on their needs and level of care. To begin palliative care, a person's healthcare provider may refer him or her to a palliative care specialist. If he or she doesn't suggest it, the person can ask a healthcare provider for a referral. Palliative care can be provided in hospitals, nursing homes, outpatient palliative care clinics, and certain other specialized clinics, or at home. Medicare and Medicaid may cover palliative care. Veterans may be eligible for palliative care through the Department of Veterans Affairs. Private health insurance might pay for some services (National Institute on Aging, 2021).

2.4.2 Hospice Care

> **Definition**: **_Hospice_** is a program that gives special care to people who are near the end of life and have stopped treatment to cure or control their disease.

Hospice offers patients and their families physical, emotional, social, and spiritual support. The main goal of hospice care is to control pain and other symptoms of illness so patients can be as comfortable and alert as possible. It is usually given at home but may also be given in a hospice center, hospital, or nursing home (National Cancer Institute, n.d.).

Increasingly, people are choosing hospice care at the end of life. Hospice care focuses on the care, comfort, and quality of life of a person with a serious illness who is approaching the end of life. At some point, it may not be possible to cure a serious illness, or a patient may choose not to undergo certain treatments. Hospice is designed for this situation. The patient beginning hospice care understands that their illness is not responding to medical attempts to cure it or to slow the disease's progress (National Institute on Aging, 2021).

Medicare pays hospice agencies a daily rate for each day a patient is enrolled in the hospice benefit. Medicare makes this

daily payment regardless of the number of services provided on a given day, including days when the hospice provides no services. (The hospice Medicare benefit, however, does **not** cover expenses related to room and board when a patient is in a nursing home or hospice inpatient facility.) The daily payment rates only cover the hospice's costs for providing services included in patient care plans. Examples of hospice-covered services include doctors service's, nursing and medical services, durable medical equipment for pain relief and symptom management, medical supplies, drugs for pain management, aide and homemaker services, physical therapy services, etc. Medicare makes daily payments based on one of four levels of hospice care (Centers for Medicare and Medicaid Services, 2022):

1. **Routine home care**: A day the patient elects to get hospice care at home and isn't getting continuous home care. A patient's home might be a home, a skilled nursing facility (SNF), or an assisted living facility. Routine home care is the level of care provided when the patient isn't in crisis.

2. **Continuous home care**: A day when both of these apply:

    ◦ The patient gets hospice care in a home setting that isn't an inpatient facility (hospital, SNF, or hospice inpatient unit)

◦ The care consists mainly of continuous nursing care at home. Patients can also get hospice aide, homemaker services, or both on a continuous basis. Hospice patients can get continuous home care only during brief periods of crisis and only as needed to maintain the patient at home.

3. **Inpatient respite care**: A day the patient elects to get hospice care in an approved inpatient facility for up to 5 consecutive days to give their caregiver a rest.
4. **General inpatient care**: A day the patient elects hospice care in an inpatient facility for pain control or acute or chronic symptom management, which can't be managed in other settings.

Like palliative care, hospice provides comprehensive comfort care and support for the family, but in hospice, attempts to cure the person's illness are stopped. Hospice is provided for a person with a terminal illness whose doctor believes he or she has six months or less to live if the illness runs its natural course. Therefore, it is important for a patient to discuss hospice care options with their doctor. Sometimes, people don't begin hospice care soon enough to take full advantage of the help it offers. Perhaps they wait too long to begin hospice and are too close to death. Or some people are not eligible for hospice care soon enough to receive its full benefit (National Institute on Aging, 2021).

In the United States, people enrolled in Medicare can receive hospice care if their healthcare provider thinks they have less than six months to live should the disease take its usual course. Doctors have a hard time predicting how long an older, sick person will live. Health often declines slowly, and some people might need a lot of help with daily living for more than six months before they die. What happens if someone under hospice care lives longer than six months? If the doctor continues to certify that that person is still close to dying, Medicare can continue to pay for hospice services. It is also possible to leave hospice care for a while and then return later if the healthcare provider still believes the patient has less than six months to live (National Institute on Aging, 2021).

2.4.3 Palliative Care vs. Hospice Care

Review infographic (CMS, n.d.): [Palliative Care vs. Hospice Care](#)

Then, test your understanding by taking the following Knowledge Check quiz.

Knowledge Check

Select the type of care that the statement represents.

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://pressbooks.uwf.edu/ushealthcaresystem/?p=445#h5p-12

Click here to move on to the Chapter Summary.

2.5 CHAPTER SUMMARY

Healthcare providers and administrators need to view care delivery as occurring along a continuum with distinct phases marked by changing levels of intensity of care. Delivery systems include inpatient, outpatient, post-acute, long-term, palliative, and hospice care. Inpatient services are services that involve an overnight stay or prolong the stay of a patient in a licensed healthcare facility. Historically, in the United States (U.S.), inpatient services are provided by hospitals. Hospitals are the most common healthcare facility for inpatient services. Hospitals may be classified by type of service, ownership, size (in terms of the number of beds), and length of stay. Community hospitals form the bulk of hospitals and hospital beds in the U.S. The AHA categorizes community hospitals by ownership, number of beds, and whether it is a teaching, critical access, or specialty hospital. Emergency departments are a major part of the US healthcare safety-net (Mortensen, 2014; Rhodes et al., 2013). Emergency departments in hospitals provide care to anyone needing emergency treatment, but tend to be overused for non-urgent and serious problems that could have been prevented with better primary and specialty care.

Outpatient services occur in a facility or setting where there

is no need for an overnight stay. Primary care is the entry point into the healthcare system and is one of the most utilized outpatient services. The four pillars of primary care include a patient's first contact with the healthcare system, continuity of care over time, comprehensiveness, and coordination of care. Venues for the delivery of primary care are private physician clinics, public or non-profit community health centers, outpatient clinics in hospitals, workplace wellness programs, and retail clinics. Two models of care are being employed to increase efficiencies in primary care delivery include patient-centered medical homes and accountable care organizations. An ambulatory surgical center is a outpatient facility that operates primarily to provide surgical services to patients who do not require overnight hospital care. Compared to hospital-based surgical centers, ambulatory surgical centers 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. Lastly, urgent care is provided outside the emergency department setting in urgent care centers 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.

Recognition of how PAC fits within the continuum can help to ensure patients achieve the greatest value possible from those delivering their care. PAC serves as a bridge to help patients regain the functional capabilities they need to return

to as normal a life as possible following an illness, accident, or injury. Long-term care is another continuum of institutional and community-based services. This broad range of personal, social, and medical services is provided in many locations, including private homes, adult day-care settings, residential care/assisted living facilities, and nursing homes. Lastly, while the objective of both hospice and palliative care is pain and symptom relief, the prognosis and care goals tend to differ. Hospice is comfort care without curative intent; the patient no longer has curative options or has chosen not to pursue treatment because the side effects outweigh the benefits. Palliative care is comfort care with or without curative intent.

Key terms included in this chapter are also listed in the Glossary at the end of the book.

Click here to view the references and attributions for Chapter 2.

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Click here to move on to Chapter 3: Health Insurance.

CHAPTER 3: HEALTH INSURANCE

Learning Objectives

- Review the terms and economic issues associated with health insurance.
- Examine the role of the private insurance sector in healthcare financing.
- Discuss the development and reimbursement methods commonly associated with managed care delivery models.
- Summarize the role of public programs in healthcare financing and the delivery of healthcare.
- Examine the newest managed care models: ACOs and PCMHs.

Chapter Sections:

3.1 BASIC CONCEPTS

Sections:

3.1.1 Key Terms

The following is a glossary of health insurance terms (Bureau of Labor Statistics, n.d.; Bureau of Labor Statistics, 2021). The sections that follow will cover the important concepts of adverse selection and moral hazard.

I. Plan Networks

In-network. Healthcare providers (e.g., specialists, hospitals, laboratories) that have accepted contracted rates with the insurer are considered in-network. As a result, the insured person typically pays a lower price for using services within the network.

Out-of-network. Healthcare providers who have not accepted contracted rates with the insurer are considered out-of-network. As a result, services received outside the network of healthcare providers with contracted rates typically carry a higher cost to the insured person.

II. Types of Plans

Conventional indemnity plan. An indemnity that allows the participant the choice of any provider without effect on reimbursement. These plans reimburse the patient and/or provider as expenses are incurred.

High deductible health plan (HDHP). This type of plan typically features a higher deductible and lower insurance premiums than traditional health plans. Normally the plan includes catastrophic coverage to protect against large medical expenses, but the insured is responsible for routine out-of-pocket expenses until they meet the plan deductible.

Managed care plans. Managed care plans generally provide comprehensive health services to their members and offer

financial incentives for patients to use the providers who belong to the plan. Four examples of managed care plans include:

- **Health maintenance organization (HMO).** A healthcare system that assumes both the financial risks associated with providing comprehensive medical services (insurance and service risk) and the responsibility for healthcare delivery to HMO members in a particular geographic area, usually in return for a fixed, prepaid fee. Financial risk may be shared with the providers participating in the HMO.
- **Preferred provider organization (PPO).** An indemnity plan where coverage is provided to participants through a network of selected healthcare providers (such as hospitals and physicians). The enrollees may go outside the network but would incur more out-of-pocket costs in the form of higher deductibles, higher coinsurance rates, or non-discounted charges from the providers.
- **Exclusive provider organization (EPO).** A more restrictive type of preferred provider organization plan under which employees must use providers from the specified network of physicians and hospitals to receive coverage; there is no coverage for care received from a non-network provider except in an emergency.
- **Point-of-service (POS) plan.** A POS plan is an HMO/

PPO hybrid, sometimes referred to as an "open-ended" HMO when offered by an HMO. POS plans resemble HMOs for in-network services. Services received outside of the network are usually reimbursed in a manner similar to conventional indemnity plans (e.g., provider reimbursement based on a fee schedule or usual, customary, and reasonable charges).

Physician-hospital organization (PHO). Alliances between physicians and hospitals for the purpose of helping providers attain market share, improve bargaining power and reduce administrative costs. These entities sell their services to managed care organizations or directly to employers.

Self-insured plan. A plan offered by employers who directly assume the major cost of health insurance for their employees.

III. Payment Terms

Capitation. A fixed sum of money is paid to the provider per time unit (usually monthly) for each patient being treated by the provider.

Coinsurance. This form of medical cost-sharing requires an insured person to pay a stated percentage of medical expenses *after the deductible amount*, if any, is paid. After any deductible amount and coinsurance are paid, the insurer is responsible for the rest of the reimbursement for covered

benefits, up to the maximum allowed charges. The individual is responsible for any charges in excess of what the insurer determines to be "usual, customary, and reasonable." Coinsurance rates may differ between services received from an approved provider and those received from providers not on the approved list.

Copayments. The fixed dollar amount that an insured person must pay when a service is received *before* the insurer pays any remaining charges.

Coverage limits. Payment limits may be set in terms of a dollar or per-day ceiling on benefits. For example, a requirement that the participant pays a percentage of costs (coinsurance), or a requirement that the participant pays a specific amount (deductible or copayment) before reimbursement begins or services are rendered. For example, a $250 copayment for hospital room and board.

Deductible. The deductible is a dollar amount that an insured person pays *during the benefit period*–usually a year–before the insurer starts to make payments for covered medical services. Plans may have both individual and family deductibles. Some plans have separate deductibles for specific services. For example, a plan may have a hospitalization deductible per admission. Deductibles may vary between services received from an approved provider (i.e., a provider with whom the insurer has a contract or an agreement specifying payment levels and other requirements) and those received from providers not on the approved list or as part of a

different tier of benefits. Some deductibles vary based on other factors (aside from plan network), such as employee length of service, salary range, or enrollee age.

Disease management. A comprehensive, integrated approach to care and reimbursement based on a disease's natural course. The goal of disease management is to address the illness or condition with maximum effectiveness and efficiency regardless of treatment setting(s) or typical reimbursement (Zitter, 1997).

Fee-for-service. A method of payment in which doctors and other healthcare providers are paid *for each service performed*. Examples of services include tests and office visits.

Gatekeeping. The requirement to visit a general practitioner, family practitioner, general internal medicine physician, or general pediatrician in an ambulatory setting and to obtain a referral prior to accessing specialist care (Garrido et al., 2011).

Maximum out-of-pocket expense. The annual dollar amount limit a participant or family is required to pay out-of-pocket in addition to the plan deductible. Until it is met, the plan and the member share the cost of covered expenses. Once reached, covered expenses are fully reimbursed for the rest of the year.

Overall limits. Restrictions that apply to all or most benefits under the plan, as opposed to selected individual benefits. An example of an overall limit is a $300-per-year deductible that must be paid before medical expenses become

eligible for reimbursement. Another example is an 80-percent coinsurance that applies to all categories of care except outpatient surgery.

Pre-authorization. A decision by a health insurer or plan that a healthcare service, treatment plan, prescription drug or durable medical equipment is medically necessary. Sometimes called prior authorization, prior approval or precertification. Some insurance plans require preauthorization that the item/service/treatment is medically necessary before it will be covered.

Premium. Agreed upon fees paid for coverage of medical benefits for a defined benefit period. Premiums can be paid by employers, unions, employees, or shared by both the insured individual and the plan sponsor.

Reinsurance. The acceptance by one or more insurers called reinsurers or assuming companies, of a portion of the risk underwritten by another insurer contracted with an employer for the entire coverage.

Stop-loss coverage. A form of reinsurance for self-insured employers that limits the amount the employers will have to pay for each person's healthcare (individual limit) or the employers' total expenses (group limit).

Usual, customary, and reasonable (UCR) charges. Conventional indemnity plans operate based on usual, customary, and reasonable (UCR) charges. UCR charges mean that the charge is the provider's usual fee for a service that does not exceed the customary fee in that geographic area

and is reasonable based on the circumstances. Instead of UCR charges, PPO plans often operate based on a negotiated (fixed) fee schedule that recognize charges for covered services up to a negotiated fixed dollar amount.

IV. Outpatient Prescription Drugs

Formulary drugs. These are both generic and brand-name drugs approved by the healthcare provider. Drugs not approved by the healthcare provider are nonformulary drugs for which enrollees receive less generous benefits, such as a higher copayment per prescription.

Brand-name drugs. These are drugs that once were or still *are under patents.*

Generic drugs. These are drugs that are *not under any patents*. Once a drug's patent has expired, some plans provide more generous coverage for same-formula generic drugs than for name-brand drugs; the practice is adopted as a cost containment measure.

Mail-order drugs. These are drugs that can be ordered through the mail. Some plans use mail-order pharmacies that typically provide a 3-month supply of maintenance drugs as a cost-containment measure.

3.1.2 Adverse Selection

Definition: *Risk* is the chance of loss or the perils to the subject matter of an insurance contract; also: the degree of probability of such loss (Merriam-Webster, 2022).

Definition: *Indemnification* is the payment for losses actually incurred (U.S. Government Accountability Office, 2006).

There is no universal agreement on a definition of **insurance**. However, most definitions have these two key elements related to risk (U.S. Government Accountability Office, 2006):

1. Risk is *transferred* – An uncertain, possibly large, loss is transformed into a certain, small cost or premium for the insured, and an insured transfers risk to another entity.

2. Risk is *spread* – An insurer spreads risk over a large enough group for the law of large numbers to predict both total losses and the probability of a single loss with some accuracy.

One complication of health insurance markets is that those who demand insurance are the ones who are more likely to need insurance. This fact in itself might not be a problem, except that individuals also know more about their own health than the companies that are insuring them.

"Selection bias" is a major issue in the U.S. health insurance market. There are two types of bias: **favorable selection** and **adverse selection**. These terms are defined from the perspective of the insurer. When there is favorable selection, the insurer enjoys healthier enrollees. Conversely, with adverse selection their enrollees are less healthy. In other words, adverse selection occurs when someone can purchase insurance only after knowing they need it, implying differences in health status or expected expenditures that the insurer cannot detect.

In practice, insurance companies often cannot classify people into precise risk groups or offer such targeted policies to low- and high-risk individuals. As a result, when lower-risk individuals opt out of the insurance market, leaving only high-risk individuals in the market (i.e., the selection is adverse), there is an information problem that is a source of market failure: the insurer will lose (or make less) money, and insurance is unavailable to low-risk individuals at a reasonable price.

3.1.3 Moral Hazard

Another complicating element for insurance is the **moral**

hazard: the idea that, after purchasing insurance, individuals may behave in riskier ways. For example, think about your likelihood of being in a car accident. The probability that you will have an accident depends on many things: road conditions, the actions of other drivers, luck, and many others. It also depends on the actions you take as a driver of the car. There are many things we do that influence our likelihood of having an accident, including (but not limited to) the following:

- Properly maintaining the car
- Paying attention when driving
- Driving when tired
- Driving after consuming alcohol

These items are influenced by the decisions that we make. The link back to insurance is that, if we are insured, we may make different choices about the condition of our car, how we drive, and our physical state when we drive. The analogous idea with health insurance is that we may choose to live a less healthy lifestyle or engage in riskier behavior if we know that we have health insurance to cover our expenses if we become sick or injured.

Insurance companies understand very well that their policies influence people's choices. Their response is to design insurance contracts that provide insurance without affecting individuals' incentives too much. For example, in the case of

automobile insurance, you will not receive full coverage for your loss in case of an accident. Instead, insurance contracts typically include: (1) a deductible, which is the amount of a loss you have to cover before any insurance payment occurs, and (2) a copayment, which is the share of the loss for which you are responsible. The same applies to medical insurance. In the event you are ill, health insurance will typically cover a wide variety of medical costs, but there will usually be a deductible and often a copayment. As with property or automobile insurance, the deductible incentivizes you to take actions that make you less likely to claim against the policy.

There are two main moral hazard issues with healthcare:

First, healthcare is an individual investment. Although no one wants to get sick, the more you pay for your own treatment, the more likely you will invest in your own health. Choices pertaining to exercise, diet, and preventive care can all depend on the insurance payments we anticipate if we need healthcare. The more insurance we have, the less incentive we have to take care of ourselves. In addition, the less we take care of ourselves, the more likely we are to present the insurance company with a sizable health bill.

Second, the size of the health bill also depends on your choices about treatment. You will meet with your doctor to jointly decide on treatments when you are ill. Although your doctor will probably talk to you about various treatment options, their price will not be the focus of the discussion. Eventually, you will meet with someone else in the office to

discuss how your treatment will be paid for and, in particular, how much will be covered by your insurance. In the end, you have a menu of treatments and a menu of prices that you have to pay. You will then choose the option from these menus that is in your best interest.

The insurance company pays some of your bill, so the amount you pay is lower than the actual treatment price. However, by the law of demand, you purchase more than you would if you had to pay the full price. For example, you might be much more inclined to get second and third opinions if you don't have to pay the full price for these.

Even if you are not ill but are instead going to see your doctor for a checkup, incentives still come into play. Many insurance policies include funding for an annual checkup with a small copayment. We respond to those incentives by going for the annual checkups covered under the policy. We don't go for checkups every month because most policies do not cover such visits. The insurance company deliberately designs the incentives so you will be more likely to find engaging in basic preventive care worthwhile.

3.1.4 Adverse Selection vs. Moral Hazard

Adverse selection and moral hazard are closely related problems in the health insurance industry that have unique differences (Mass, 2016):

- Both are caused by information asymmetry:
  - **Adverse selection** is caused by asymmetry *in information before* insurance is purchased, such as when individuals/patients who know they are more likely to require care tend to choose more generous insurance plans.
  - **Moral hazard** is caused by asymmetry *in actions after* insurance is purchased, such as when a buyer of insurance is incentivized to use more services because they will bear a smaller share of their medical care costs.
- The cost of managing both problems can be decreased by reducing uncertainty (i.e., gathering more information).

Table 1 Adverse Selection vs. Moral Hazard

Common Issues	Adverse Selection	Moral Hazard
Information Asymmetry	Resulting from hidden information	Resulting from hidden actions
Related to the Transaction	Occurs before a transaction: lower-risk individuals opt out of the insurance market, leaving only high-risk individuals in the market	Occurs after a transaction: buyer of insurance has incentives to engage in undesirable activities or use more services
Management of the Problem	The cost of managing both problems can be reduced by reducing uncertainty (gathering more information)	

(Mass, 2016)

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://pressbooks.uwf.edu/ushealthcaresystem/?p=639#h5p-33

Click here to move on to 3.2 Private Health Insurance.

3.2 PRIVATE HEALTH INSURANCE

Sections:

3.2.1 Employer-Sponsored (Group) Insurance

Before 2010, the percentage of workers receiving employer-sponsored insurance ranged from 60%-69%, while post-2021, the range has held within the mid-50% range (Kaiser Family Foundation, 2021). The employer-sponsored insurance journey is similar to that of hospitals and physicians. Initially,

medical insurance was what we categorize as catastrophic indemnity insurance, with copays ranging from 10%-20%. Catastrophic indemnity insurance pays only for significant expenses over a certain amount, such as hospitalization, similar to automobile insurance. Gradually more services were offered as part of medical insurance until any service, including preventive care, might be included in an employer-sponsored plan.

Initially, medical insurance was only for the employee and not the employee's family. The growth in family coverage occurred following the 1949 Supreme Court ruling allowing benefits to become a part of labor negotiations and increasing the cost of medical insurance to employers. Medical (health) insurance cost escalation occurred in conjunction with the escalating cost of medical care to a point where executives found continued medical insurance price increases unsustainable. As a result, employers began to demand more for their money and their employees.

Executives pursued three lines of action to reduce escalating medical insurance costs. *First*, in the 1980s, they began shifting employer-sponsored insurance to managed care plans, which were developed to increase efficiency and cost controls of healthcare by combining financing, insurance, and service provision. *Second*, in the 1990s, employers demanded improved health outcomes, initiating the healthcare quality movement. *Third*, they began to require their employees to pay a portion of the premium and insisted upon other funding

mechanisms such as copays and deductibles. After 1990, managed care plans became the dominant employer-sponsored insurance model. Limitations on patient choice in managed care led to a shift towards a hybrid approach. The most popular plan currently is the preferred provider organization (PPO) with elements of managed care and patient choice. Since 2010, high deductible PPO plans coupled with a health savings account, where employees are responsible for a large deductible before medical services are covered, are on a trajectory to become the most popular plan.

Review webpage (Kaiser Family Foundation, 2021): [Employer Health Benefits Survey 2021](#)

Several factors drive the demand for coverage, including the size of the employed population and subsidies available to employers to provide coverage. 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 (U.S.). More specifically, there has been a gradual decline in manufacturing jobs and the increase in retail jobs. There has also been a transition from larger to smaller

employers and from full-time to part-time jobs. One result was fewer union workers; traditionally, those in unions are more likely to have health insurance (Swartz, 2006).

3.2.2 Individual (Non-Group) Insurance

The individual health insurance markets are comprised of plans purchased directly from the insurer. Individual insurance plan rates are typically higher than the employer's group rates. The individual insurance market has been around for about as long as the group market, accounting for about 4% to 6% of the total market. Individuals purchasing medical (health) insurance through the individual market include those employed by small employers (fewer than 50 employees) or professionals such as physicians or lawyers in solo or small practices. Individuals and families without an entry into the employer insurance market and those not eligible for Medicare and Medicaid seek coverage individually.

Prior to implementation of the major parts of the Patient Protection and Affordable Care Act (ACA), individual coverage had several disadvantages over employer-group coverage and, therefore, would typically have been purchased only if the alternative was unavailable. It was rarely 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). The ACA changed much of this: it provides significant subsidies, prohibits high administrative costs, has no health restrictions on enrollment, and requires that people of the same age be charged the same premiums regardless of health status. In addition, the ACA rearranged the individual market providing a federal government sliding scale subsidy for individuals between 100% to 400% of the federal poverty level. Plans purchased through the Marketplace are required to meet the ACA criteria of a quality plan.

Review webpage (Kaiser Family Foundation, 2019a): [Changes in Enrollment in the Individual Health Insurance Market through Early 2019](#)

3.2.3 Managed Care

I. The Triple Aim

Despite nearly one out of five dollars in the U.S. being spent on healthcare, the U.S. consistently ranks among the worst out of industrialized countries for health outcomes, and it has only been exacerbated by COVID (Hartman et al., 2022). The ACA borrowed heavily from the concept of the **Triple Aim**

(Fig. 3-1): simultaneously improving the patient experience of care, improving population health, and reducing the per capita costs of care (Institute for Healthcare Improvement, n.d.).

However, the U.S. stands out internationally for unusually high costs and poor outcomes among industrialized countries (Schneider et al., 2021). As a result, the Centers for Medicare and Medicaid Services (CMS) were authorized to specify quality measures that would best advance the National Quality strategic objective and build upon the Hospital Inpatient Quality Reporting infrastructure. This framework also helped lead to the more formal establishment and proliferation of different types of managed care organizations (Aroh et al., 2015).

Figure 3-1

The Triple Aim
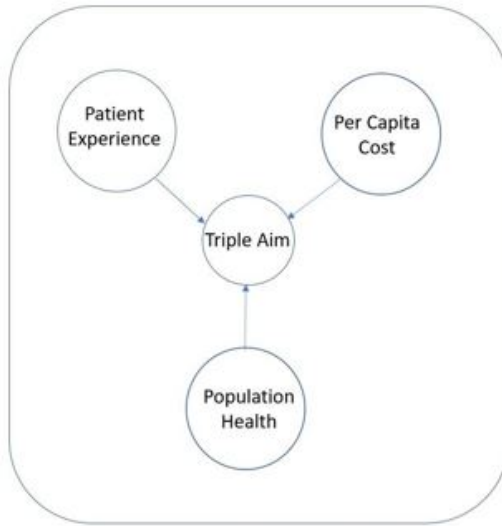
(Institute for Healthcare Improvement, n.d.)

II. Types of MCOs

Managed care organizations (MCOs) are integrated and coordinated organizations designed to provide care to a specific patient population. The main overreaching goals are to keep costs down while providing high-quality patient care (Heaton & Tadi, 2020). There are four main types of MCOs: Health Maintenance Organization (HMO), Preferred Provider Organization (PPO), Point of Service (POS), and Exclusive Provider Organization (EPO).

Health maintenance organizations (HMOs)

Two features typically define health maintenance organizations: 1) the requirement of a designated gatekeeper and 2) the restriction to in-network providers under normal circumstances. A gatekeeper is a Primary Care Provider (PCP) responsible for preventative care screenings, routine physicals, and other primary care services. They are called a gatekeeper because the patient must first see the gatekeeper to obtain referrals to specialists. The idea is to keep the more expensive specialists reserved for conditions that cannot be handled by a primary care practitioner. The second restriction is that healthcare is only covered by the insurance plan if given by a hospital or provider who is in-network; otherwise, the patient is completely financially responsible. The only exception is typically for emergency room care, where a patient cannot be reasonably expected to verify in-network status. As a result, HMOs are generally the cheapest MCO (Falkson & Srinivasan, 2022). There are four common models of HMO organizations: group, independent practice association (IPA), network, and staff.

1. **Group Model** – In the group model, the HMO contracts with a single, multispecialty entity for providers to provide care to its members. The HMO likely contracts additionally with a hospital in order to be able to provide comprehensive care to its members. The HMO pays the medical group a negotiated per

capita rate, which the group distributes among its physicians, usually on a salaried basis.

2. **Independent Practice Association (IPA) Model** – This set-up is closest to the original pre-paid plans mentioned above. An IPA is a group of independent practitioners and group providers who decide to form a legal contract with a separate legal entity known as the IPA. This IPA then contracts with the HMO to negotiate the administrative and logistical details of any arrangement, as well as some of the financial risk. That is part of why this model is so appealing to providers (Gold, 1999).

3. **Network Model** – In this model, the HMO contracts with multiple provider groups, either single or multispecialty, to provide services to its members.

4. **Staff Model** – This model involves the HMO directly employing providers on a salary basis. Typically, the HMO employs physicians in a range of specialties in order to more fully serve its patients in its own facilities. HMOs often find this appealing because they exert a great deal of control directly over the physicians. This model is also known as a closed-panel HMO.

On the patient side, there are **premiums** which are fees that must be paid on an annual or monthly basis. The premium enrolls the patient in the plan. When incurring medical costs, the first portion of the medical bill goes towards the

deductible, which is the first portion of the medical bills sustained, which the patient must pay out-of-pocket before the insurance will pay for anything. The next fee possibly encountered is the **copay**. The copay is a flat fee (e.g., $35 for every primary care visit) paid out of pocket by the patient for a set service. The final out-of-pocket expenditure is **coinsurance**. Coinsurance is a percentage of the remaining balance that the patient must pay (e.g., the HMO will pay 80% of the procedure, and the patient must pay the remaining 20%).

The HMO pays providers typically through salary or capitation. **Capitation** is when a fixed sum of money is paid per time unit (usually monthly) per patient being treated by the provider. For example, a physician in the HMO with 100 patients designating her as their Primary Care Provider would receive a fixed sum for each of those 100 patients each month.

Preferred provider organizations (PPOs)

Preferred provider organizations provide patients with quite a bit more choice. There is no gatekeeper in a PPO. The next differential is that there are different coverage tiers, with patients allowed to go in-network and out-of-network to providers and still receive insurance coverage. However, by going out-of-network, they would incur larger costs, such as higher deductibles or higher coinsurance rates. These features make PPOs open-panel plans. In an open panel plan, the MCO provides incentives for the patients to use participating

(i.e., in-network) providers but also allows patients to use out-of-network providers.

Local PPOs have a small service area and are open to beneficiaries who live in specified counties, much like most HMOs. Regional PPOs are much larger and contract with an entire region. Regional PPOs are required to serve areas defined by one or more states with a uniform benefits package across the service area. Regional PPOs have gained limited traction nationally because employers prefer local PPOs, although they are somewhat popular in the smaller states (Jacobson et al., 2017). Instead of paying providers with a capitation fee schedule, PPOs typically negotiate fee discounts with providers. Within the same hospital, the same procedure may be up to 31% cheaper than the average cost depending on the insurer (Craig et al., 2021).

Point of service (POS)

In the evolution of MCOs, point of service organizations are essentially trying to combine the costs saving aspects of the HMOs with the increased flexibility of choice of provider in a PPO. Under this structure, the patient has a gatekeeper, usually a primary care provider, who is an initial point of service for the patient. The patient is also responsible for getting referrals to specialists from this gatekeeper.

Exclusive provider organizations (EPO)

Exclusive provider organizations are somewhat like HMOs in that they only pay for in-network costs, and all out-of-network costs are the patient's responsibility. However, unlike HMOs, they do not require a gatekeeper, and patients are not required to get referrals to see other in-network providers (Table 2).

Table 2 A Comparison of Traditional MCOs

Type of MCO	HMO	PPO	POS	EPO
Gatekeeper	X		X	
Out-of-Pocket Costs are Patient's Responsibility	X			X

(HealthCare.gov., n.d-a)

III. Utilization Review

Utilization review (UR) is one of the primary tools utilized by MCOs to control over-utilization, reduce costs, and manage care. It can also be done to keep costs down or to ensure that proper protocols are being used in a fair and equitable way (Bohan et al., 2019). Utilization review can be required by hospitals, Worker's Compensation, and insurance

companies (Appelbaum & Parks, 2020; Bean et al., 2020; Siyarsarai et al., 2020). In addition to ensuring quality care, UR can be used to prevent fraud, waste, and inappropriate care from being provided to patients (Bean et al., 2020). There are three main types of utilization reviews:

- Prospective Utilization Review

- Concurrent Utilization Review
- Retrospective Utilization Review

Key Term

Prior Authorization. A decision by a health insurer or plan that a health care service, treatment plan, prescription drug, or durable

When looking at these three types, the biggest difference in how they are conducted is when the review is done. **Prospective UR,** such as with prior authorization, is done prior to the medical services or procedures being delivered (Giardino & Wadhwa, 2022). **Concurrent UR** is conducted while the medical services are ongoing. Concurrent UR is often required by providers and can be used to validate the consumption of resources

during a hospital stay, such as for inpatient case management where continuous review is necessary (Namburi & Tadi, 2022; Olakunle et al., 2011). It is also frequently associated with discharge planning to help ensure continuity of care (Smith et al., 2020). Finally, **retrospective UR** is done after the services are provided and the bill is delivered (Giardino & Wadhwa, 2022).

While there are some differences between these three methods, because of when they are conducted, there are many similarities between the basic procedures of these three approaches. The first step is to check eligibility with the insurance plan and/or ensure that the requested service is appropriate. If checking for appropriateness, typically, the insurer or plan will use nationally developed clinical guidelines for standards of care

medical equipment is medically necessary. Sometimes called prior approval or precertification, a health insurance or plan may require prior authorization before care is provided, except in an emergency. Prior authorization isn't a promise the health insurance or

plan will cover the cost of care. (HealthCare.gov., n.d-b)

(Giardino & Wadhwa, 2022). The next step is to gather clinical information to determine if the criteria are met for the service. It is very important that the clinical staff document everything, including the absence of things, for this step to succeed. It may be common for clinical staff to fail to note things that look normal (i.e., "charting by exception"), but this can result in denials and delays during the UR process and is strongly discouraged. The provider will be notified If the reviewer determines that the criteria are met. If not, the provider and the patient will be notified of the denial, and they can appeal, usually by providing more information.

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://pressbooks.uwf.edu/ushealthcaresystem/?p=642#h5p-14

[Click here to move on to 3.3 Public Health Insurance & Services.](#)

3.3 PUBLIC HEALTH INSURANCE & SYSTEMS

Sections:

3.3.1 Medicare Federal Insurance Program

Medicare was established in 1965 as Title XVIII of the Social Security Act (Center for Medicare and Medicaid Services [CMS], 2021). It was legislated as a complement to Social Security retirement, survivors, and disability benefits. It originally covered people aged 65 and over, but in 1972 the

program expanded to cover certain people with disabilities and people with end-stage renal disease (ESRD) under 65 years of age. In 2001, legislation was passed to add amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's Disease, as a qualifying condition for Medicare coverage. People under age 65 who receive Social Security Disability Insurance (SSDI) payments generally become eligible for Medicare after a two-year waiting period, while those diagnosed with end-stage renal disease (ESRD) and amyotrophic lateral sclerosis (ALS) become eligible for Medicare with no waiting period.

The Medicare program was further expanded in 2003 with the Medicare Prescription Drug, Improvement, and Modernization Act, which included a prescription drug benefit for all Americans with Medicare beginning January 1, 2006 (CMS, 2021). Medicare routinely processes over one billion fee-for-service (FFS) claims annually, accounting for approximately 11% of the federal budget. Since 1966, Medicare enrollment has increased from 19 million to 63 million individuals (CMS, 2022a). In summary, the Medicare program provides health insurance coverage to nearly all Americans aged 65 and older, disabled Americans under 65 who have received federal disability payments for two or more years, as well as people with ESRD and ALS under 65 years of age (CMS, 2021). The following Medicare timeline provides an overview of changes that have shaped the Medicare program over the past five decades.

Review timeline (Kaiser Family Foundation, 2015): [Medicare Timeline](#)

I. Breadth of Coverage

Medicare is a combination of the following four programs:

- Hospital Insurance (Part A)
- Supplementary Medical Insurance (Part B)
- Medicare Advantage (Part C)
- Medicare Prescription Drug Benefit (Part D).

Part A – Hospital insurance

Medicare Part A is hospital coverage that all Medicare recipients receive at no cost. It was initially developed based on the 1960 Blue Cross plan. **Part A includes hospital care and some post-acute nursing home, home health, and hospice care**. Over time, Part A expanded to include not only the aged but also individuals certified as disabled and people with end-stage renal disease. In addition, individuals and their spouses aged 65 and older who worked for at least ten years, during which time they contributed federal payroll taxes that supported both Social Security (the United States statutory retirement pension system) and Medicare, are entitled to Part A coverage.

Initially, Part A was paid on a cost-plus fee-for-service basis

with minimal oversight. Hospitals found this a rich source of income and quickly embraced Medicare as a payment mechanism. This rich payment method and rapid adoption by hospitals fueled a rapid rise in medical inflation that a number of administrative and legislative actions has unsuccessfully addressed. Two of the most significant cost-control actions have been the implementation of prospective (rather than retrospective) payment systems known as Diagnostic-Related Groups (DRGs) and Ambulatory Payment Classification (APC). The development of DRG and APC codes was based upon an extensive examination of normal time and payment for diagnoses in the inpatient (DRGs) and outpatient (APC) arenas. Current Procedural Terminology (CPT) codes followed a similar developmental course focused on medical and surgical procedures. Lastly, ICD stands for the International Classification of Disease. The ICD provides a method of classifying diseases, injuries, and causes of death. The World Health Organization (WHO) publishes the ICDs to standardize the methods of recording and tracking instances of diagnosed disease all over the world, making it possible to conduct research on diseases, their causes, and their treatments (National Cancer Institute, 2018).

According to H1 (2023):

> DRG, ICD, and CPT are all codes used with Medicare and insurers, but they communicate different things. ICD codes are used to explain the diagnosis, and CPT codes describe procedures that the healthcare provider performs.

Both diagnosis (i.e., ICD codes) and procedure (i.e., CPT codes) are used to determine DRG. The DRG determines the single payment the hospital will receive for treating the patient — not for each syringe, swab, X-ray image, room supply, or pill, but one cost that covers the entire care episode. If a patient could be classified according to two DRGs, the hospital will receive the higher reimbursement amount.

The significant evolution since the onset of Medicare started with payment for services plus capital costs, then shifted to payment for services based on diagnosis, and has now moved to payment for service outcomes. The Patient Protection and Affordable Care Act (ACA), passed in 2010, "was designed to improve healthcare quality and patient experience by leveraging financial carrots and sticks to encourage hospitals to follow established best clinical practices and improve patient satisfaction scores through the development of several Pay for Performance (P4P) programs" (NEJM Catalyst, 2018). In 2012, these P4P programs began reimbursing hospitals based on the quality of health care they deliver (i.e., payment for service outcomes), rather than the quantity of services delivered (James, 2012). Medicare generally pays about 60% of the charges. While this is a higher payment than Medicaid, it is still a low payment that places a significant financial strain on hospitals and health systems.

Definition: *Current Procedural Terminology (CPT)* is a uniform coding system primarily used to describe tests, surgeries, evaluations, and any other medical procedure performed by a healthcare provider on a patient (CMS, 2023).

Definition: *Diagnostic-Related Group (DRG)* is a method of paying hospitals prospectively for *inpatient* services by relating the type of patients a hospital treats (i.e., its case mix) to the resource demands and associated costs incurred by the hospital (CMS, n.d.-a).

Definition: *Ambulatory Payment Classification (APC)* is a method of paying facilities prospectively for *outpatient*

services (i.e., significant outpatient surgical procedures, radiology, and other diagnostic services, medical visits, and partial hospitalizations). The key data in determining the fixed APC payment rate is the coding and classification of services reported by CPT codes (Medpac, 2021).

Part B – Supplementary medical insurance

Medicare Part B is a voluntary program with the same eligibility requirements as Part A. However, this coverage is optional for Medicare recipients and comes with a small fee that is automatically deducted from the recipient's Social Security check. Also known as Supplementary Medical Insurance (SMI), this program is voluntary and available to nearly all people aged 65 and over, people with disabilities, and people with ESRD. **Medicare Part B (i.e., SMI) helps cover doctors' services and outpatient care.** The SMI program pays for physician care, outpatient hospital services, some home healthcare, laboratory tests, durable medical equipment, designated therapy, some outpatient prescription drugs, and other services not covered by Part A, such as some of the services of physical and occupational therapists. SMI helps pay

for these covered services and supplies when they are medically necessary (CMS, 2021).

Part C – Medicare advantage

The Balanced Budget Act of 1997 established the Medicare+Choice program, now known as Part C or the Medicare Advantage Program, to provide more healthcare coverage choices for individuals with Medicare (CMS, 2021). Therefore, **Part C is an alternative to Parts A and B**. Enrollment 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 Parts A and B (which are sometimes called 'traditional Medicare') is that Part C coverage is offered through private organizations such as health maintenance organizations, rather than through a public insurer (i.e., Medicare).

When a beneficiary receives a service under Part A or B, the Medicare program 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 per month for each enrollee based on the characteristics (e.g., demographics, medical diagnoses) of the particular enrollees in the plan. Those who are eligible because of age (65 or older) or disability may choose to join

a Medicare Advantage (MA) plan servicing their area if they are entitled to Part A and enrolled in Part B. Those who are eligible for Medicare because of ESRD could join a MA plan beginning January 1, 2021. Many MA plans offer additional services such as prescription drugs, vision, and dental benefits. MA plans may also cover some or all of an enrollee's out-of-pocket costs. MA plans assume full financial risk for care provided to their Medicare enrollees (CMS, 2021).

Part D – Prescription drug benefit

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 the hospital. Similar to Part C, Part D benefits are provided through private organizations such as private insurers, health maintenance organizations, or preferred provider organizations. In 2018, there were approximately two dozen choices among Part D plans in each state. Like Part C, premiums and benefits vary by plan, with competition occurring based not only on premium differences but also on differences in benefits. In particular, drugs included a plan's formulary are listed as 'preferred' drugs and are subject to lower or zero patient co-payments.

Review issue brief (Kaiser Family Foundation [KFF], 2019b): An Overview Of Medicare

II. 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, 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 glasses, except in limited circumstances. 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 program does include some coverage for nursing home and home healthcare. This coverage, however, is aimed at acute-care illnesses needing skilled care (e.g., rehabilitation). Skilled care must be deemed medically necessary by a physician; **custodial care** is not covered. Moreover, nursing home care can only be covered by Medicare if it follows an inpatient hospital stay of at least three days and coverage is provided for a maximum of 100 consecutive days.

> **Definition: *Custodial care*** is non-medical care that can be safely provided by non-licensed caregivers. It can take place at home or in a nursing home and involves help with daily activities like bathing and dressing. In some cases where care is received at home, care can also include help with household duties such as cooking and laundry. It may be covered by Medicaid if care is provided in a nursing home setting and not at home (CMS, n.d.-b).

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 process 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 program has a formal appeals process when disputes occur.

Review infographic (CMS, 2022a): [Medicare Beneficiaries at a Glance: Who's Covered by Medicare – 2020](#)

Review infographic (CMS, n.d.-b): [Custodial Care Vs. Skilled Care](#)

3.3.2 Medicaid & CHIP Joint Insurance Programs

I. Medicaid

Enacted in 1965 as Title XIX of the Social Security Act, Medicaid is administered by CMS in partnership with the states (CMS, 2021). Although the federal government establishes certain parameters for all states to follow, each state administers its Medicaid program differently, resulting in variations in Medicaid coverage across the country. States have flexibility in determining Medicaid benefit packages within federal guidelines; however, states are required to cover certain mandatory benefits. In addition, states have additional options for coverage and may choose to cover other groups, such as individuals receiving home and community-based services (HCBS) and children in state-funded foster care. States and the federal government jointly fund the Medicaid program. CMS provides matching payments to the

states and territories for Medicaid program expenditures and related administrative costs. Medicaid provides access to comprehensive health coverage that may not be affordable otherwise for millions of Americans, including eligible low-income adults, children, pregnant women, elderly adults, and people with disabilities. Medicaid is the primary source of healthcare for more than 83 million individuals. Over 10 million people are **dually eligible** for both Medicare and Medicaid (CMS, 2021).

Review fact sheet (CMS, 2020a): [Dually Eligible Individuals](#)

The main population 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.

Medicaid is a federal / state cooperative agreement, with the state needing to vote into law the agreement to provide Medicaid for its residents. States agreeing to provide Medicaid for their residents agree to administer the program and provide a minimum set of healthcare services based upon income eligibility (less than 133% of the federal poverty level with expanded Medicaid, less than 100% in states that did not

expand Medicaid) and demographic characteristics such as female, pregnant female, child, disabled, and poor older adult. The federal government provides a sliding scale level of support for the program ranging from 50% – 78% based on the state per capita income, with states with the lowest per capita income getting the highest matching level. Providers are often reluctant to take patients on Medicaid due to the low payment rate of approximately 40% of billed charges. To control administrative costs, most states moved their Medicaid populations to Medicaid Managed Care contracts during the 1990s (Medicaid.gov, n.d.-a).

The passage of the ACA in 2010 increased eligibility for Medicaid coverage to a variety of demographic groups, with the largest group being single men and the next group being older adults (KFF, 2023). As of 2023, "40 states (including DC) have adopted the Medicaid expansion, and 11 states have not adopted the expansion" (KFF, 2023). As often stated, to be eligible for Medicaid pre-ACA, a person had to be poor plus something (e.g., female, child, old, disabled); post-ACA, a person just had to be poor. According to Norris (2023):

> States will never be responsible for more than 10% of the cost of expansion. The federal government paid the full cost of expansion for the first three years (2014 through 2016). The federal government's portion gradually dropped to 90% by 2020. For perspective, under traditional Medicaid (i.e., the non-expansion Medicaid population), states can pay up to 50% of the cost.

For states that expand Medicaid, the federal funding they receive will always dwarf the amount that the state has to spend. And although states have to cover 10% of the cost of Medicaid expansion, their net spending can be much less than that — even negative in some cases

Medicaid provides healthcare payments for eligible recipients. The four largest healthcare expenditure categories are: hospitals, physicians and clinics, retail prescriptions, and long-term care. Long-term care (nursing homes) is a unique area of Medicaid expenditures where individuals requiring long-term care initially enter long-term care facilities under Medicare (e.g., for short-term skilled care), private insurance, or self-pay. Once an individual has exhausted these private funding options and only has minimal remaining personal assets (i.e., house, car, and minimal savings) and are therefore considered impoverished, they transition to Medicaid for the remainder of their long-term care stay.

II. Children's Health Insurance Program

The Children's Health Insurance Program (CHIP) was created through the Balanced Budget Act of 1997 and provides low-cost health coverage to children in families that earn too much money to qualify for Medicaid (Rudowitz et al., 2014). In some states, CHIP covers pregnant women. Household income eligibility for CHIP varies by state and ranges from 133% to 400% of the federal poverty level. To be

eligible for this benefit program, applicants must live in the state in which they apply and meet all of the following criteria (Benefits.gov., n.d.; Medicaid.gov, n.d.-b):

- Either 18 years of age and under or a primary caregiver with a child(ren) 18 years of age and under, and
- A United States (U.S.) Citizen, National, or a Non-Citizen legally admitted into the U.S., and
- Uninsured (and ineligible for Medicaid).

Like Medicaid, CHIP is administered by the states but is jointly funded by the federal government and states. The Federal matching rate for state CHIP programs is typically about 15 percentage points higher than the Medicaid matching rate for that state (i.e., a State with a 50% Medicaid FMAP has an enhanced CHIP matching rate of 65%). Every state administers its own CHIP program with broad guidance from CMS. States have the flexibility to design their own CHIP program within federal guidelines, so benefits vary by state and by the type of program. States may choose between a Medicaid expansion program, a separate CHIP, or a combination of both programs. Regardless of the type of separate CHIP coverage a state elects, all states must provide well-baby and well-child care, dental coverage, behavioral healthcare, and vaccines (Benefits.gov, n.d.; Medicaid.gov, n.d.-b).

3.3.3 Public Health Systems

In addition to the Medicare, Medicaid, and CHIP public insurance programs, there are four public health systems that provide comprehensive health services to unique populations. These systems include the **Indian Health Service, Military Health Service**, **Veterans Affairs Health Services, and the prison healthcare system.**

As of 2021, the U.S. federal government provides health services for approximately 21.2 million Americans within unique populations, or 2.7% of the US population, through the Indian Health Service, Military Health Service, and Veterans Affairs Health Services (CMS, 2020b)**.** These three services are generally provided through a comprehensive, integrated health system administered by the Department of Health and Human Services (Indian Health Services), Department of Defense (Military Health Services), and Department of Veterans Affairs (U.S. military veterans). These services provide complete medical, surgical, dental, vision, hearing, and mental health inpatient and outpatient services in facilities owned by the sponsoring agency through healthcare professionals employed by the same sponsoring agency. Even though these services are comprehensive, individuals covered under these services may be treated in the private sector when geographic or treatment barriers exist.

The final area of government provision of healthcare services is the prison healthcare system. Correctional health,

provided by the prison healthcare system, encompasses all aspects of health and well-being for adults and juveniles who are justice syste from their arrest, during detention or incarceration, and through the time they return to their community (called **reentry**). Correctional health also includes the health of families and communities of persons who are justice system-involved and of the administrators and staff who work in facilities (Centers for Disease Control and Prevention, 2023).

I. Indian Health Service

The Indian Health Service (IHS) provides health services to American Indians and Alaskan Natives. It is a byproduct of the tribal governments to federal government relationships reaching back to the U.S. Constitution Article I, Section 8 (National Indian Health Board, 2015). The relationships between the tribal and federal governments are complex and, while constitutional, are also contractual and moral agreements with tribal governments due to land displacement through the early years of the United States. Comprehensive and integrated IHS healthcare services are provided through the Department of Health and Human Services (HHS), with the HHS acting as the owner of all facilities and employer of all personnel.

II. Military Health Service

The military provides healthcare services wherever military personnel are deployed. It is considered a moral obligation of society to care for the healthcare needs of those protecting and defending our country. These services can vary from medic-provided care in the field to complex medical or surgical care in state-of-the-art hospitals. It is unlikely that civilian healthcare professionals will interact with individuals in the military health system unless there is the need for an extremely rare medical or surgical intervention that cannot be provided within the system. **TRICARE** is an option of the military health system that provides healthcare services worldwide for uniformed service members, retirees, and service family members through a system that is very similar to the options available in the private insurance market. The Defense Health Agency manages TRICARE under the leadership of the Assistant Secretary of Defense (Health Affairs).

III. Veterans Affairs Healthcare System

The Veterans Affairs Healthcare System (VAHS) is a national system of clinics and hospitals that provides healthcare services for military veterans. The Department of Veterans Affairs administers the VAHS and, as with the military health system, is considered a moral obligation for the nation to provide for those who have served to protect and defend our country. As

with the IHS and military healthcare systems, the VAHS is an integrated, comprehensive healthcare system that prefers to have its members receive services from VAHS facilities and providers. However, treatment may be authorized in more convenient private settings in recognition of patient geographic barriers or specialized treatment needs.

IV. Prison Healthcare System

Federal, state, and local governments have an obligation to care for the healthcare needs of inmates and do so through clinics and hospitals provided by the Department of Corrections. However, depending upon the severity of the healthcare condition and prison resources available, treatment may also be authorized through private facilities and providers. Inmates cared for in private settings are always accompanied by a guard to ensure the safety of the private facilities and providers delivering care.

Knowledge Check

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Click here to move on to 3.4 Insurance Coverage and Trends.

3.4 INSURANCE COVERAGE & TRENDS

Sections:

3.4.1 Insurance Coverage (Private and Public)

1. Current Highlights according to Keisler-Starkey & Bunch (2022):

- In 2020, 8.6% of people, or 28.0 million, did not have health insurance at any point during the year.
- The percentage of people with health insurance coverage for all or part of 2020 was 91.4%.

- In 2020, private health insurance coverage remained more prevalent than public coverage at 66.5% and 34.8%, respectively. Of the subtypes of health insurance coverage, employment-based insurance was the most common, covering 54.4% of the population for some or all of the calendar year, followed by Medicare (18.4%), Medicaid (17.8%), direct-purchase coverage (10.5%), TRICARE (2.8%), and Department of Veterans Affairs (VA) or Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA) coverage (0.9%).
- Between 2018 and 2020, the private health insurance coverage rate decreased by 0.8 percentage points to 66.5%, driven by a 0.7 percentage-point decline in employment-based coverage to 54.4%.
- Between 2018 and 2020, the public health insurance coverage rate increased by 0.4 percentage points to 34.8%.
- In 2020, 87.0% of full-time, year-round workers had private insurance coverage, up from 85.1 percent in 2018. In contrast, those who worked less than full-time were less likely to be covered by private insurance in 2020 than in 2018 (68.5% in 2018 and 66.7% in 2020).
- More children under the age of 19 in poverty were uninsured in 2020 than in 2018. Uninsured rates for children under the age of 19 in poverty rose 1.6 percentage points to 9.3%.

II. Reports (for further exploration)

1. Source: United States Census Bureau (Keisler-Starkey &

Bunch, 2022)

- ◦ [Health Insurance Coverage in the United States 2021](#)

- ◦ [Percentage of People by Type of Health Insurance Coverage and Change From 2020 to 2021](#)

2. Source: National Health Statistic Report (Cha & Cohen, 2022)

   - ◦ [Demographic Variation in Health Insurance Coverage: United States, 2020](#)

3.4.2 Insurance Trends

Two insurance trends developed to reduce total health expenditures and health services utilization are the Accountable Care Organization and the Patient-Centered Medical Home.

I. Accountable Care Organizations

Definition: *Accountable Care Organizations*

> *(ACOs)* are groups of doctors, hospitals, and other healthcare providers, who partner voluntarily to give coordinated high-quality care to the Medicare patients they serve. Coordinated care helps ensure that patients, especially the chronically ill, get the right care at the right time to avoid unnecessary duplication of services and prevent medical errors. When an ACO succeeds in delivering high-quality care and spending healthcare dollars more wisely, it will share in the savings it achieves for the Medicare program (CMS, 2022a).

Accountable Care Organizations (ACOs), also known as Medical Neighborhoods, are a relatively new type of managed care organization. While most ACOs are Medicare plans, there are some private ACOs. As with all managed care, the goal is to coordinate care. Since 2012, ACOs have saved Medicare $13.3 billion in gross savings (National Association of ACOs, n.d.). ACOs allow physicians, hospitals, and other clinicians or healthcare organizations to work more effectively together to improve quality and slow spending growth by allowing for coordination of care among all the different providers needed to fully care for the whole person.

There are three core principles of Accountable Care Organizations:

1. Provider-led organizations with a strong base of primary care that is accountable for healthcare quality and per capita costs.
2. Payments linked to improvement in quality and reduced costs.
3. Reliable and increasingly sophisticated measurement of performance to support improvement and provide confidence care is improved, and cost savings occur (Moy et al., 2022).

The Patient Protection and Affordable Care Act (ACA) created the **Medicare Shared Savings Program (MSSP)** in part to help address the fragmented nature, lack of coordination, and confusion that multiple payors can create (Berwick, 2011). Under the ACA, the ACO is accountable for the cost and quality of care. As of January 2022 (Table 3), there were 483 ACOs, with over half a million clinicians providing care to 11 million beneficiaries participating in the MSSP (Physicians Advocacy Institute, n.d.). There are multiple tracks in the MSSP program that ACOs can choose, with increasing levels of risk/reward, depending on how confident the ACO is that it can improve the health of the population it is serving. In general, if the ACO can save money by improving the health of the population for both themselves

and Medicare, the ACO will get to share in a percentage of the saved costs. However, if the ACO fails to reach these goals, it will receive a penalty by having its reimbursement cut by a certain, agreed-upon percentage. Because this strategy reimburses for clinical outcomes, it is an example of a Pay for Performance strategy.

Another form of reimbursement ACOs can receive is bundled payments (Navathe et al., 2020). The **Center for Medicare and Medicaid Innovation (Innovation Center)** created the **Bundled Payment Care Initiative (BPCI)** as a new way of linking payments for an episode of care (Agarwal et al., 2020). Instead of taking the payments from each individual provider separately, it links the various providers together for one single payment. One of the differences with bundled payments is that it shifts the clinical and financial responsibility on providers to a single care episode for an individual instead of the current setup of making reimbursement tied to ongoing outcomes. For example, the ACO would simply bill for a single bundled payment for all providers involved in a knee replacement instead of billing each provider separately. Suppose the providers are able to coordinate care effectively and keep the total care costs for the knee replacement below the bundled payment reimbursement amount. In that case, they are able to generate and share in a profit. However, if the total care costs exceed the bundled payment amount, they all incur a financial loss. Studies show that bundled payment reimbursements maintain or improve

quality and lower the cost of caring for lower extremities. However, this payment method does not seem to be as effective with other conditions or procedures (Agarwal et al., 2020).

Table 3 Shared Savings Program Information: Program Statistics (as of January 1st of each year)

Performance Year	# ACOs	# Assigned Beneficiaries
2022	483	11.0 million
2021	477	10.7 million
2020	517	11.2 million
2019	487	10.4 million
2018	561	10.5 million
2017	480	9.0 million
2016	433	7.7 million
2015	404	7.3 million
2014	338	4.9 million
2012/2013	220	3.2 million

(Centers for Medicare and Medicaid Services, 2022b)

II. Patient-Centered Medical Home

The Patient-Centered Medical Home (PCMH) concept was originally introduced in 1967 by the American Academy of Pediatrics. In 2007, the concept was further refined into a set of principles by four primary care physician organizations, including the: American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, and American Osteopathic Association. PCMHs are sometimes confused with ACOs, but they are quite different. PCMHs are a multidisciplinary approach to *primary care delivery* (Hong et al., 2018). The ACA allowed special funding avenues for state medical homes with Medicaid beneficiaries (Davis et al., 2011). The PCMH focuses on providing meaningful, holistic care of the patient, both physical and mental, via an interdisciplinary team of providers under one roof (Bresnick, 2019). Today there are several medical home models of care with corresponding certifications, accreditations, or recognition programs. Although consensus exists around the basic components of the medical home, not all models look alike or use the same approaches to improve healthcare quality and control costs. According to the Agency for Healthcare Research and Quality (2022), the attributes of a PCMH are:

1. Comprehensive Care
2. Patient-Centered

3. Coordinated Care
4. Accessible Services
5. Quality and Safety

PCMHs were believed to hold great promise to address longstanding inequities in the quality of *primary care* experienced among socially and economically marginalized populations. However, a study by Bell et al. (2021) of the geographic distribution of the country's medical homes indicated that medical homes are more likely to emerge within communities that have more favorable health and socioeconomic conditions. Despite the wide adoption of PCMHs, the evidence about effectiveness remains mixed in terms of spending and outcomes. One potential explanation for these mixed findings is the wide variation in how practices implement the model. For example, significant reductions in emergency department utilization, outpatient care, laboratory services, and imaging services distinguish those practices that emphasized the adoption of (or expanded use of) health information technology (Saynisch et al., 2021). The major ways in which PCMHs are financed are: increased fee-for-service (FFS) payments, traditional FFS payments with additional per-member-per-month (PMPM) payments, and traditional FFS payments with PMPM and pay-for-performance payments (Basu et al., 2016).

Review infographic (Primary Care Collaborative, 2022): [What is a Patient-Centered Medical Home?](#)

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Click here to move on to the Chapter Summary.

3.5 CHAPTER SUMMARY

This chapter provided a glossary of insurance terms and presented the basic concepts of adverse selection and moral hazard. Adverse selection occurs when the insured (i.e., the patient) knows of medical or surgical needs that are not shared with the insurer, allowing the insured to gain coverage below the actual cost of their risk. In healthcare insurance, moral hazard is encountered by individuals who go to the doctor as often as they wish because their visit is "free" with no out-of-pocket cost. Funding of healthcare services in the United States has evolved from an arrangement between patients and physicians to a mixed public/private system where hardly any end users of services make direct payments to providers for the full amount charged for those services. All providers document the services provided that are then paid for by a third-party payer. Hardly anyone receiving those services understands the true cost of health care in the United States, nor do they understand how much or why providers are paid what they are paid. Types of private insurance include employer-sponsored or group insurance, individual or non-group insurance, and managed care plans which package insurance, care provision, and payment into one organization.

Types of government or public insurance include Medicare,

Medicaid, the Children's Health Insurance Program (CHIP), and other public health services. While Medicare provides public insurance primarily for the elderly, Medicaid and the Children's Health Insurance Program, provide public insurance primarily for the poor. In addition, four public health systems provide comprehensive health services to unique populations. These systems include the Indian Health Service, Military Health Service (TRICARE), Veterans Affairs Health Services, and the prison healthcare system. Only about one-third of Americans have government-sponsored coverage. Insurance through the employment sector is more common. However, it 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 10 Americans is uninsured, which is considerably lower than before the major elements of the Patient Protection and Affordable Care Act (ACA) were implemented. New trends in health insurance include Accountable Care Organizations and Patient-Centered Medical Homes. Accountable Care Organizations (ACOs) are interdisciplinary teams of providers who come together voluntarily to give coordinated, high-quality care. The focus of the Patient-Centered Medical Home (PCMH) is to provide care with a multidisciplinary approach to primary care delivery.

Key terms included in this chapter are also listed in the Glossary at the end of the book.

[Click here to view the references and attributions from Chapter 3.](#)

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CHAPTER 4: ACCESS, QUALITY & COST

Learning Objectives

- Describe the importance and role of Population Health Management and strategies to improve health outcomes.
- Explore national strategies to increase insurance coverage rates and improve access to healthcare.
- Define the six domains of healthcare quality.
- Summarize the most widely used quality improvement methodologies in healthcare and examples of programs designed to evaluate quality.
- Compare healthcare spending in the United

States with other high-income countries.
- Outline several national trends affecting the cost of health care and related impacts.

Chapter Sections:

4.1 BASIC CONCEPTS

Sections:

4.1.1 Population Health Management

Populations refer to individuals and the context where people live, work and play in local communities (Carlson, 2020). The term population health is described as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group" (Kindig & Stoddart, 2003).

Population health (PopH) is extremely broad and "recognizes the range of social, economic, and physical environmental factors that contribute to health" (Public

Health Agency of Canada, 2012). Focusing on a population's health versus targeting individual health has become an essential framework for delivering healthcare. The American Hospital Association (2023), a major health sector stakeholder, defines *Population Health Management (PHM)* by adding and integrating a strong management component. The new PHM pathway has transitioned from a disease-only treatment model for individuals to a population health strategy focused on groups, and, finally to a management model that requires clinical effectiveness, cost-effectiveness, and safer health outcomes.

> **Definition: *Population Health Management (PHM)*** "is the process of improving clinical health outcomes of a defined group of individuals through improved care coordination and patient engagement supported by appropriate financial and care models" (American Hospital Association, 2023).

In 1979, a landmark document titled "Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention" recommended for the first time a coordinated national healthcare strategy (Office of Disease Prevention and Health Promotion [ODPHP], 2021). Then, in 1980, ODPHP

released Healthy People 1990, which was followed in later decades by new iterations of the Healthy People initiative, each building on the last. At the end of every decade, the U.S. Department of Health and Human Services assesses progress toward achieving Healthy People's 10-year national objectives. Over the years, the five editions of Healthy People have regularly provided evidence for setting health goals and objectives to address the enormous variation in the distribution of disease and morbidity for various at-risk and minority populations (ODPHP, n.d.). The latest version of our national public health objectives, **Healthy People (HP) 2030**, lists 355 core objectives ranging from reducing chronic diseases to mitigating the contagious disease that reached a pandemic stage, COVID-19. This expansive document not only provides evidence-supported objectives but also identifies metrics to help track them. The following HP 2030 goals serve as guidelines for all collaborative health efforts, including PHM (Centers for Disease Control and Prevention [CDC], 2020).

- Attain healthy, thriving lives and well-being free of preventable disease, disability, injury, and premature death.
- Eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all.
- Create social, physical, and economic environments that

promote the full potential for health and well-being for all.

- Promote healthy development, healthy behaviors, and well-being across all life stages.
- Engage leadership, key constituents, and the public across multiple sectors to act and design policies that improve the health and well-being of all.

4.1.2 The Triple Aim

Health policy experts responded to the challenge of improving health and produced several major national health commentaries to guide new models. Two prominent reports that attracted enormous attention and concern were the Institute of Medicine's "To Err is Human" and "Crossing the Quality Chasm: A New Health System for the 21st Century" (National Academy of Medicine, 2000, 2001). All Americans should expect safe care, free from mistakes, and quality care that is accessible and effective. Both documents described crises within the health sector needing drastic and immediate change. However, a seminal article introduced one of the most important PHM components – the Triple Aim. The Triple Aim concept was a proposed solution to an existing model first introduced in William Kissick's book, *Medicine's Dilemmas: Infinite Needs Versus Finite Resources* in 1994. This first model, known as The Iron Triangle (Fig. 4-1), focused on three key

aims of healthcare delivery: access, quality, and cost (Berwick et al., 2008).

Figure 4-1

Three Key Aims of the Iron Triangle
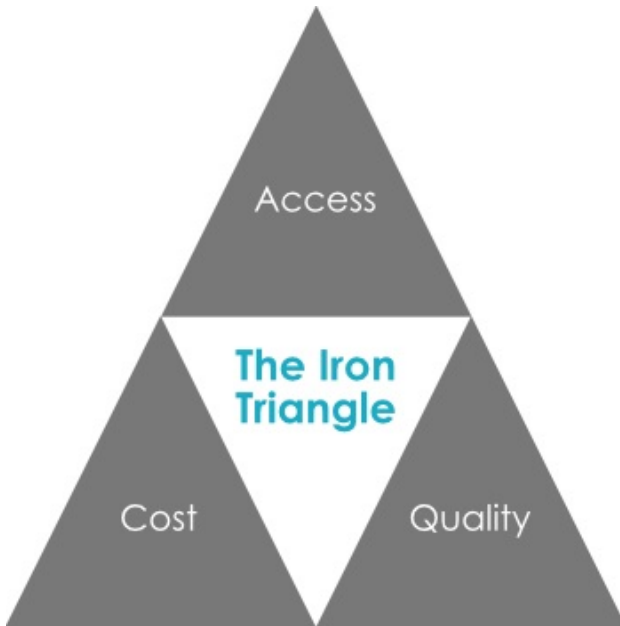
(Berwick et al., 2008)

The **Triple Aim of Healthcare** was presented by the Institute for Healthcare Improvement in 2007 (Berwick et al., 2008). It was defined as an attempt to realign the three aims of healthcare previously identified in the Iron Triangle. The Institute for Healthcare Improvement (IHI) intended for this new model to change the dynamics of healthcare from one focused on an individual to one encompassing population and society at large. It also wanted to shift our thinking from a

healthcare system utilized to cure each illness that arises for individuals on a case-by-case basis to one that encompasses the maintenance of the health and wellness of populations. This new model would include treating chronic conditions (i.e., those that develop over time and are ongoing) rather than acute conditions (i.e., those that develop suddenly and are limited in duration). The IHI realized that treating chronic diseases such as diabetes, heart disease, cancer, and others cost the U.S. healthcare system billions of dollars. Today, it costs us over a trillion dollars (Waters & Graf, 2018). Costs and patient outcomes were the driving forces in the IHI's development of the Triple Aim. The Triple Aim has the following three pillars (Berwick et al., 2008):

1. Improving the patient experience of care
2. Improving the health of populations
3. Reducing the per capita cost of healthcare

Improving individual patient experience had previously been understood as the main focus of improvement for healthcare delivery; however, the Triple Aim also included the elements of population health and cost (Fig. 4-2). As a result, these are now considered critical elements in determining the improvements made in the healthcare industry.

Figure 4-2

The Three Key Elements of the Triple Aim

The Triple Aim of Healthcare
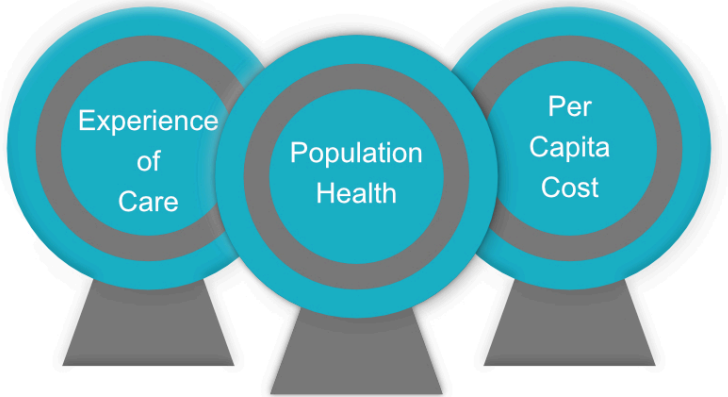
(Berwick et al., 2008)

Knowledge Check

> An interactive H5P element has been excluded from this version of the text. You can view it online here:
> https://pressbooks.uwf.edu/ushealthcaresystem/?p=834#h5p-18

Click here to move on to 4.2 Access to

[Care.](#)

4.2 ACCESS TO CARE

4.2.1 Access to Health Services

Definition: ***Access to healthcare*** is the "timely use of personal health services to achieve the best possible health outcomes" (Institute of Medicine, 1993).

Many people face barriers that prevent or limit access to needed healthcare services, which may increase the risk of poor health outcomes and health disparities (Institute of Medicine, 2003). Barriers that prevent or limit access include lack of health insurance and other barriers such as poor access to transportation and limited healthcare resources.

I. Lack of Health Insurance

About 1 in 10 people in the United States don't have health insurance (Berchick et al., 2018). Inadequate health insurance coverage is one of the largest barriers to healthcare access, and the unequal distribution of coverage contributes to disparities in health (Call et al., 2014; Institute of Medicine, 2003). Out-of-pocket medical care costs may lead individuals to delay or forgo needed care (such as doctor visits, dental care, and medications). In fact, medical debt is common among both insured and uninsured individuals (Herman et al., 2011; Pryor & Gurewich, 2004). People with lower incomes are often uninsured, and minority groups account for over half of the uninsured population (DeNavas-Walt, 2010; Franks et al., 1993; Hadley, 2003; Majerol et al., 2015; Zhu et al., 2010).

Lack of health insurance coverage may negatively affect health (Institute of Medicine, 2009; Majerol et al., 2015). Uninsured adults are less likely to receive preventive services for chronic conditions such as diabetes, cancer, and cardiovascular disease (Ayanian et al., 2000; Institute of

Medicine, 2009). Similarly, children without health insurance coverage are less likely to receive appropriate treatment for conditions like asthma or critical preventive services such as dental care, immunizations, and well-child visits that track developmental milestones (Institute of Medicine, 2009).

In contrast, studies show that having health insurance is associated with improved access to health services and better health monitoring (Baicker et al., 2013; Buchmueller et al., 2005; McWilliams et al., 2003). For example, one study demonstrated that when previously uninsured adults ages 60 to 64 became eligible for Medicare at age 65, their use of basic clinical services increased (McWilliams et al., 2003). Similarly, providing Medicaid coverage to previously uninsured adults increased their chances of receiving a diabetes diagnosis and using diabetic medications (Myerson & Laiteerapong, 2016). Medicaid coverage is also critical for enabling children with special health needs or chronic illnesses to access health services. The Children's Health Insurance Program (CHIP) is the only source of coverage for 41% of children with special healthcare needs (Musumeci, 2018). Many healthcare resources are more prevalent in communities where residents are well-insured, but the type of insurance individuals have may also matter (Institute of Medicine, 2009). Medicaid patients, for instance, experience access issues when living in areas where few physicians accept Medicaid due to its reduced reimbursement rate (Bodenheimer & Pham, 2010; Buchmueller et al., 2005; Decker, 2012).

II. Other Barriers

Health insurance alone cannot remove every barrier to care (Call et al., 2014). Limited availability of healthcare resources is another barrier that may reduce access to health services and increase the risk of poor health outcomes (Douthit et al., 2015; National Association of Community Health Centers and the Robert Graham Center, 2007). For example, physician shortages may mean that patients experience longer wait times and delayed care (Bodenheimer & Pham, 2010).

Inconvenient or unreliable transportation can interfere with consistent access to healthcare, potentially contributing to negative health outcomes (Syed et al., 2013). For example, research has shown that individuals from racial/ethnic minority groups with an increased risk for severe illness from COVID-19 were more likely to lack transportation to healthcare services (Clay et al., 2021). Transportation barriers and residential segregation are also associated with the late-stage presentation of certain medical conditions, such as breast cancer (Dai, 2010; Tarlov et al., 2009; Wang et al., 2008).

Expanding access to health services is an important step toward reducing health disparities. Affordable health insurance is part of the solution. However, factors like economic, social, cultural, and geographic barriers to healthcare must also be considered, as must new strategies to increase the efficiency of healthcare delivery (Bodenheimer & Pham, 2010; Call et al., 2014; Douthit et al., 2015; Green et

al., 2013; Rieselbach et al., 2010). Further research is needed to better understand barriers to healthcare. This additional evidence will facilitate public health efforts to address access to health services as a social determinant of health.

Source for 4.2.1: (U.S. Department of Health and Human Services, n.d.-a)

4.2.2 Access to Primary Care

Definition: ***Primary care*** is "the provision of integrated, accessible healthcare services by clinicians accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients, and practicing in the context of family and community" (Institute of Medicine, 1996).

A primary care provider is usually an internist, family physician, pediatrician, or non-physician provider such as a family nurse practitioner or physician assistant (Friedberg et al., 2010; Shi, 2012). Research shows that access to primary care is associated with positive health outcomes (Shi, 2012; Starfield et al., 2005).

Primary care providers offer a usual source of care, early

detection and treatment of disease, chronic disease management, and preventive care (Friedberg et al., 2010; Shi, 2012; Starfield et al., 2005). Patients with a usual source of care are more likely to receive recommended preventive services such as flu shots, blood pressure screenings, and cancer screenings (Blewett et al., 2008; Friedberg et al., 2010; Xu, 2002). However, disparities in access to primary care exist, and many people face barriers that decrease access to services and increase the risk of poor health outcomes (American College of Physicians, 1999). Some of these obstacles include lack of health insurance, language-related barriers, disabilities, inability to take time off work to attend appointments, geographic and transportation-related barriers, and a shortage of primary care providers (American College of Physicians, 1999; Avila & Bramlett, 2013; Ayanian et al., 2000; Bodenheimer & Pham, 2010; Douthit et al., 2015; Gleason & Kneipp, 2004; Krahn et al., 2006; Tolbert et al., 2022). These barriers may intersect to further reduce access to primary care.

Lack of health insurance decreases the use of preventive and primary care services and is associated with poor health outcomes (American College of Physicians, 1999; Ayanian et al., 2000; Brown et al., 2000; Tolbert et al., 2022; Zuvekas & Taliaferro, 2003). Individuals without health insurance may delay seeking care when they are ill or injured and are more likely to be hospitalized for chronic illness. Children who do not primarily speak English and immigrant Hispanic children are more likely to lack a usual source of care compared to

non-immigrant Hispanic individuals in English-speaking households (Avila & Bramlett, 2013). Similarly, a study examining health quality of life outcomes in older populations discovered that older immigrants with limited English proficiency had less access to healthcare than older adults who speak English fluently (Nguyen & Reardon, 2013).

Limited provider office hours and availability can be barriers to accessing primary care (O'Malley et al., 2012; Schoen et al., 2009). Many primary care providers do not offer services during off-work hours, posing barriers to workers without sick leave benefits (Gleason & Kneipp, 2004). One study found that even when workers were provided with sick leave, some did not take time off to receive primary care because they feared losing wages (Gleason & Kneipp, 2004). Additionally, primary care provider shortages and extreme demand often make it challenging for patients to get an appointment (Douthit et al., 2015).

Factors such as access to transportation, travel distance, and the supply of primary care providers can also limit people's ability to get primary care (Douthit et al., 2015). For example, rural residents may need to travel long distances to get primary care and thus may be less likely to seek preventive care such as vaccinations (Douthit et al., 2015). In addition, rural communities tend to have fewer providers than urban communities; this relative shortage of providers may make it harder for rural residents to access primary care (Douthit et al., 2015; Institute of Medicine, 1996).

Primary care is critical for improving population health and reducing health disparities (Starfield et al., 2005). Therefore, addressing barriers to accessing primary care may help reduce disparities and the risk of poor health outcomes. For example, the National Health Service Corps supports the work of primary healthcare clinicians in areas of the United States with limited access to care, also called health professional shortage areas (National Health Service Corps, 2021). Digital solutions like telehealth can also improve access to primary care by reducing barriers related to transportation and expanding the ability to offer services in languages other than English (Rural Health Information Hub, 2022).

Further research is needed to better understand barriers to primary care, offer support to primary care providers, and develop interventions that expand primary care access. This additional evidence will facilitate public health efforts to address access to primary care as a social determinant of health.

Source for 4.2.2: (U.S. Department of Health and Human Services, n.d.-b)

4.2.3 Health Literacy

Healthy People 2030 has elevated the importance of health literacy by declaring it a foundational principle and overarching goal. The following two definitions together constitute health literacy (National Library of Medicine, 2021):

1. **Personal health literacy** is the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others. Examples of personal health literacy include understanding prescription drug instructions, understanding doctor's directions and consent forms, and the ability to navigate the complex healthcare system.

2. **Organizational health literacy** is the degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others. Examples of organizational health literacy include simplifying the process to schedule appointments, using

Key Term

Literacy. The ability to use printed and written information to function in society, achieve one's goals, and develop one's knowledge and potential (White & Dillow, 2005)

the Teach-Back method to ensure patient comprehension, and providing communications in the appropriate language, reading level and format.

Healthy People and the U.S. Department of Health and Human Services have long recognized that health literacy is not just the result of individual capacities but also the health-literacy-related demands and complexities of the healthcare system (U.S. Department of Health and Human Services, 2003, 2010). This official recognition of the two dimensions of health literacy clarifies the different routes to health literacy improvement and encourages stakeholders to engage on both levels. In addition, Healthy People's new definitions of health literacy also underscore the differences between social risks and social determinants of health.

I. Personal Health Literacy

Personal health literacy is a social risk associated with worse healthcare and health outcomes (Berkman et al., 2011). When individuals have limited personal health literacy, they are at higher risk of misunderstanding information important to achieving and maintaining health or losing their way in the fragmented healthcare system.

Most measures of personal health literacy assess people's ability to understand written health information and numbers. Using such an assessment in English, the only

national health literacy measure found that over a third of adults in the U.S. have limited personal health literacy (U. S. Department of Health and Human Services, 2008). Assessing personal health literacy at a given point in time to target interventions to individuals has limitations; measurement tools can lack precision, and personal health literacy skills can fluctuate, declining at times of illness or stress (Pleasant et al., 2016). However, assessment at the aggregate level allows support and resources to be targeted to communities and populations in greatest need. Currently, there is no national measure of personal health literacy.

II. Organizational Health Literacy

Living in communities served by healthcare organizations that lack organizational health literacy can affect the quality of healthcare delivered and, consequently, health outcomes. People who reside near the catchment areas of organizations with limited health literacy may be more likely to suffer from miscommunication and have difficulty accessing services. Even people with high personal health literacy can suffer ill effects from low organizational health literacy. Healthy People 2030 organizational health literacy objectives focus on provider-patient communication and shared decision-making.

The concept of organizational health literacy is still evolving. Attributes of a health-literate organization and strategies for becoming a health-literate organization have been

articulated (Abrams et al., 2014; Brach, 2017; Brach et al., 2012; Brega et al., 2015; Farmanova et al., 2018; Koh et al., 2013). Many measures of organizational health literacy have been developed, but currently, there is no measure of the extent of organizational health literacy in the nation (Brega et al., 2019; Kripalani et al., 2014). In addition, studies of organizational health literacy have largely been descriptive, with few impacts reported (Adsul et al., 2017; Brach, 2017; Institute of Medicine, 2013; Isibel, 2020; Kaphingst et al., 2014; Weaver et al., 2012). Additional research on the effect of organizational health literacy is needed (Agency for Healthcare Research and Quality, 2020a).

III. Health Literacy and Health Equity

Personal health literacy is associated with racial/ethnic minority status, age, poverty, health insurance coverage, educational attainment, language spoken before starting school, and self-reported health (Kutner et al., 2006). Strategies to increase personal health literacy disproportionately benefit populations that have been marginalized and therefore have the potential to decrease health disparities.

Similarly, improving organizational health literacy may reduce disparities. For example, one aspect of being a health-literate organization is meeting the needs of populations with a range of health literacy levels. Health-literate organizations

advance health equity by ensuring that everyone, regardless of their abilities, can make use of health information and services.

The National Action Plan to Improve Health Literacy called for interventions that increase both organizational and personal health literacy (U.S. Department of Health and Human Services, 2010). On the organizational health literacy front, its goals include promoting changes in the healthcare system that improve communication, informed decision-making, and access to culturally and linguistically appropriate health information and services. On the personal health literacy front, it promotes accurate, standards-based, and developmentally appropriate health and science information and curricula in child care and education through the university level, and expands adult education and English language instruction.

Source for 4.2.3: (U.S. Department of Health and Human Services, n.d.-c)

Knowledge Check

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https://pressbooks.uwf.edu/
ushealthcaresystem/?p=920#h5p-40

Click here to move on to 4.3 Quality of Care.

4.3 QUALITY OF CARE

Sections:

4.3.1 Definition and Domains of Quality

Definition: *Healthcare quality* is "the degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current

professional knowledge" (Agency for Healthcare Research and Quality, [AHRQ], 2020b).

A definition of quality that has historically guided the measurement of quality initiatives in healthcare systems is based on the framework for improvement created by the Institute of Medicine (IOM). The IOM changed its name to the National Academy of Medicine (NAM) in 2015. The National Academy of Medicine further defines quality as having the following properties or domains (AHRQ, 2020b):

- **Safe:** Avoiding harm to patients from the care intended to help them.
- **Effective:** Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (i.e., avoiding underuse and misuse).
- **Patient-centered:** Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- **Timely:** Reducing waits and sometimes harmful delays for both those who receive and those who provide care.
- **Efficient:** Avoiding waste, including waste of equipment, supplies, ideas, and energy.

- **Equitable:** Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

This framework continues to guide quality improvement initiatives across America's healthcare system. The evidence-based practice (EBP) movement began with the public acknowledgment of unacceptable patient outcomes resulting from a gap between research findings and actual healthcare practices. For EBP to be successfully adopted and sustained, it must be adopted by healthcare team members, system leaders, and policymakers. Regulations and recognitions are also necessary to promote the adoption of EBP. For example, the Magnet Recognition Program promotes nursing as a leader in catalyzing the adoption of EBP and using it as a marker of excellence (Stevens, 2013).

4.3.2 Quality Improvement Methods

Healthcare differs from other industries that rely on labor in that it is more difficult to achieve increased productivity. Effective performance improvement methodologies in healthcare have been slow to adapt. Healthcare providers are increasingly challenged to provide improved patient services at a faster pace. The traditional physician-centric model of

healthcare must change. The following are four widely utilized improvement methodologies to improve processes and quality: 1) Plan-Do-Study-Act, 2) Six Sigma, 3) Lean, and 4) Lean Six Sigma.

I. Plan-Do-Study-Act

One of the most commonly used improvement methods is the **Plan-Do-Study-Act (PDSA)** cycle (Fig. 4-3). PDSA was developed in 1986 as a more effective alternative to a precursor method known as Plan-Do-Study-Check. Since quality improvement projects are typically team-based, PDSA places great emphasis on including the right people for success (Langley et al., 2009). Planning can be the most important part of a successful project. Change should be monitored and adjusted as needed. The cycle of PDSA allows for refinement of the change to implementation on a broader scale after successful changes have been identified (Langley et al., 2009). The following two documents review the steps associated with each phase of the PDSA cycle and examples in a healthcare setting:

- The PDSA Cycle Step by Step (Administration for Children & Families, 2018)
- Plan-Do-Study-Act (PDSA) Directions and Examples (AHRQ, 2020c)

Figure 4-3

Plan-Do-Study-Act Method for Quality Improvement

(AHRQ, 2020c)

II. Six Sigma

Six Sigma is another model for quality improvement using a measurement-based strategy for process improvement and problem reduction applied to improvement projects. The term Six Sigma derives from the Greek letter σ (sigma), used to denote standard deviation from the mean or how far something deviates from perfection. By definition, six sigma is the equivalent of 3.4 defects or errors per million (Seecof, 2013). Six Sigma models include DMAIC (define, measure,

analyze, improve, control) and DMADV (define, measure, analyze, design, verify). DMAIC is used to make incremental improvements to existing processes, whereas DMADV is used to develop new processes at Six Sigma quality levels (Seecof, 2013). DMAIC is a formalized problem-solving method designed to improve the effectiveness and ultimate efficiency of the organization (Table 1).

Table 1 The DMAIC Method

What is DMAIC?

Define: What is the problem?	Who wants the project, and why The scope of the project/improvement Key team members and resources for the project Critical milestones and stakeholder review Budget allocation
Measure: How big is the problem?	Ensure measurement system reliability Prepare a data collection plan How many data points need to be collected How much time will data collection take What is the sampling strategy Who will collect data, and how will it be stored
Analyze: What is causing the problem?	Use a variety of tools Choose the tools that best fit the improvement strategy
Improve: What will solve the problem?	Gain insight into the problem's causes Control/eliminate those causes to achieve better performance
Control: How can the improvement be sustained?	The best controls are those that require no monitoring

(Ahmed, 2019)

Having arrived at one or more solutions, it is time to

implement new processes or systems and monitor to ensure consistent achievement. The "control" stage is the release of responsibility from the project. Once this stage is achieved, some organizations may implement the support of a Six Sigma project team to ensure the sustainability of the improvement in the future.

III. Lean

> **Definition:** ***Lean*** is "a set of management practices to improve efficiency and effectiveness by eliminating waste" (The American Society for Quality, 2023a).

Lean concepts can be introduced as a tool to reduce waste, including unnecessary work due to errors, poor organization, or communication. The core principle of Lean is to reduce and eliminate non-value-adding activities and waste. According to Simon (2013), the three key pillars of Lean in healthcare include (Fig. 4-4):

1. Delivering value (from the patient's perspective)
2. Eliminating waste (from the patient's perspective)
3. Continuously improving processes to better serve patients

Figure 4-4

The Three Key Pillars of Lean in Healthcare

The Three Pillars of Lean

Delivering Value

Eliminating Waste

Continuously Improving
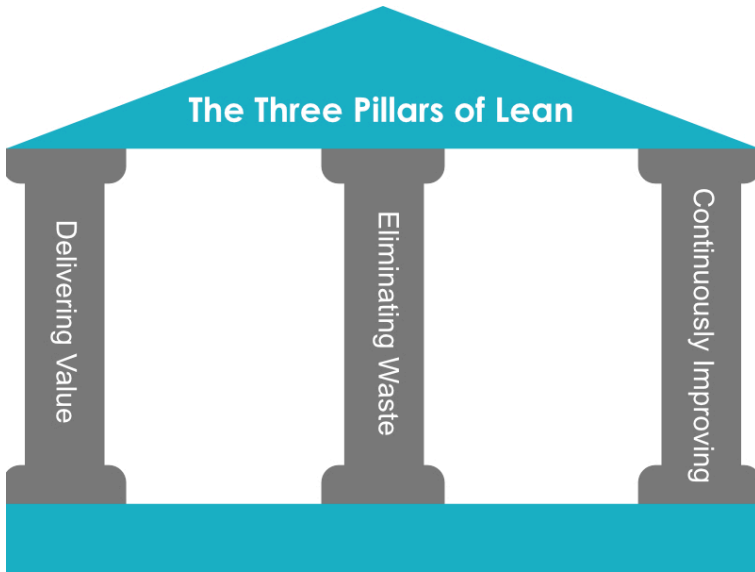
(Simon, 2013)

Lean methodology designates eight areas of waste: defects, overproduction, waiting, transportation, inventory, motion, extra-processing, and non-utilized or underutilized talent (American Society for Quality, 2023a). Some examples that may seem insignificant include the following:

- Reducing inventory, especially medical supplies that have expiration dates
- Reducing or maximizing the use of space

- Reducing wait times
- Reductions of defects, medical errors, and mistakes
- Increasing the overall productivity and utilization of employees

Value stream mapping is a technique organizations use to create a visual guide of all the components necessary to deliver a product or service, aiming to analyze and optimize the entire process. According to the American Society for Quality (2023b):

> Value stream mapping is a workplace efficiency tool designed to combine material processing steps with information flow, along with other important related data. VSM is an essential Lean tool for an organization wanting to plan, implement, and improve while on its Lean journey. VSM helps users create a solid implementation plan to maximize their available resources and help ensure that materials and time are used efficiently.

Definition: *Value stream mapping* is "a lean tool that employs a flowchart documenting every step in the process. Many Lean practitioners see VSM as a fundamental tool to identify waste, reduce process cycle times, and implement process improvement" (American

Society for Quality, 2023b).

Using Lean concepts can improve the quality of patient care. To illustrate, review these Lean implementation case studies (Purdue University, 2022):

Rural hospital uses Lean Daily Improvement to increase patient feedback

Primary care practice improves EHR efficiency for better physician-patient interaction

Also, consider these various scenarios:

1. Providers walk down the hall to a printer. This effort is wasted motion and time. A more efficient solution may be to install a printer at both ends of the clinic.
2. The new electronic health record (EHR) system is not optimized, and physicians must scroll through hundreds of diagnosis and billing codes. Consider condensing the list of available codes to the top five or ten. This small change could save them a significant amount of time and frustration.
3. A nurse performing clerical duties may need to redistribute some tasks to non-licensed employees, thus optimizing their nursing skills on more appropriate tasks.

4. One floor is short-staffed, while another floor has a low patient volume. Nursing staff may need to be redistributed to help balance the workload on the other floors.

IV. Lean Six Sigma

Lean Six Sigma is a philosophy of improvement that values defect prevention over defect detection (American Society for Quality, 2023a). It drives patient satisfaction and bottom-line results by reducing variation, waste, and cycle time while simultaneously promoting process standardization and flow. The combination, Lean Six Sigma, became mainstream in healthcare by the 2000s.

Using the two initiatives together has resulted in superior results to what either program could have achieved alone. Lean creates value by minimizing waste, while Six Sigma reduces defects through effective problem-solving. In addition, Lean can accelerate the Six Sigma process, making it more efficient.

Preparing a healthcare team for change using Lean and Six Sigma requires the organization to set clear goals, communicate, establish a Lean mindset by cultivating shared leadership among the team, start small, and find a change agent. Often, the best change agent can be the provider or employee with the strongest opposition. Gaining their trust, respect, and buy-in can be the biggest asset. For example,

several senior physicians in a medical practice opposed the rollout of a new EHR system. Getting the strongest opposition on board by explaining that the success of this rollout would weigh heavily on the administrator's job performance was critical. His desire to ensure the administrator's success in the eyes of leadership was enough to get him on board. He became the physician champion by gaining the buy-in from the rest of the providers. This step was the lynchpin in the project's success.

4.3.3 Measures of Quality

Examples of quality measures in healthcare include the:

- Magnet Recognition Program
- Value-based reimbursement models
- CMS quality initiatives
- Accreditation review process
- Core measures
- Patient safety goals

I. Magnet Recognition Program

The **Magnet Recognition Program** is an American Nurses Credentialing Center award that recognizes organizational commitment to nursing excellence. "The Magnet Recognition Program designates organizations worldwide where nursing

leaders successfully align their nursing strategic goals to improve the organization's patient outcomes" (American Nurses Association, n.d.). To nurses, Magnet Recognition means education and development are available throughout their career. To patients, it means quality care is delivered by nurses who are supported to be the best they can be.

II. Reimbursement Models

Quality healthcare is also defined by the **value-based reimbursement models** used by Medicare, Medicaid, and private insurance companies paying for healthcare services. Reimbursement models use financial incentives to reward quality healthcare and positive patient outcomes. For example, Medicare no longer reimburses hospitals to treat patients who acquire certain preventable conditions during their hospital stay, such as pressure injuries or urinary tract infections associated with the use of catheters (James, 2012). These reimbursement models directly impact the evidence-based care nurses provide at the bedside and the associated documentation of assessments, interventions, and nursing care plans to ensure quality performance criteria are met.

There are five original value-based programs; their goal is to link provider performance of quality measures to provider payment (Centers for Medicare and Medicaid Services, 2022a):

- **End-Stage Renal Disease Quality Incentive**

Program – The Centers for Medicare & Medicaid Services (CMS) administers the End-Stage Renal Disease Quality Incentive Program to promote high-quality services in renal dialysis facilities. The first of its kind in Medicare, this program changes the way CMS pays for the treatment of patients who receive dialysis by linking a portion of payment directly to facilities' performance on quality of care measures.

- **Hospital Value-Based Purchasing Program** – The Hospital Value-Based Purchasing Program (VBP) rewards acute care hospitals with incentive payments for the quality of care provided in the inpatient hospital setting. The Hospital VBP Program encourages hospitals to improve the quality, efficiency, patient experience and safety of care that Medicare beneficiaries receive during acute care inpatient stays.

- **Hospital Readmission Reduction Program** – The Hospital Readmission Reduction Program is a Medicare value-based purchasing program that encourages hospitals to improve communication and care coordination to better engage patients and caregivers in discharge plans and, in turn, reduce avoidable readmissions.

- **Value Modifier Program (also called the Physician Value-Based Modifier)** – The Merit-based Incentive Payment System (MIPS) under the Quality Payment Program replaced the Physician Feedback/Value-Based

Payment Modifier Program on January 1, 2019. The Physician Feedback Program provided comparative performance information to solo practitioners and medical practice groups, as part of Medicare's efforts to improve the quality and efficiency of medical care furnished to Medicare beneficiaries.

- **Hospital Acquired Conditions Reduction Program** – The Hospital Acquired Conditions Reduction Program encourages hospitals to improve patients' safety and reduce the number of conditions people experience from their time in a hospital, such as pressure sores and hip fractures after surgery. This Program encourages hospitals to improve patients' safety and implement best practices to reduce their rates of infections associated with health care.

Other value-based programs include (Centers for Medicare and Medicaid Services, 2022a):

- **Skilled Nursing Facility Value-Based Purchasing** – The CMS awards incentive payments to skilled nursing facilities (SNFs) through the Skilled Nursing Facility Value-Based Purchasing (SNF VBP) Program to encourage SNFs to improve the quality of care they provide to Medicare beneficiaries. For the Fiscal Year 2024 Program year, performance in the SNF VBP Program is based on a single measure of all-cause

hospital readmissions.

- **Home Health Value-Based Purchasing** – The CMS Innovation Center implemented the Home Health Value-Based Purchasing (HHVBP) Model (i.e., the original Model) in nine (9) states on January 1, 2016. The specific goals of the original Home Health Value-Based Purchasing (HHVBP) Model were to provide incentives for better quality care with greater efficiency, study new potential quality and efficiency measures for appropriateness in the home health setting, and enhance the current public reporting process. The expanded HHVBP Model began on January 1, 2022 and includes Medicare-certified Home Health Agencies in all fifty (50) states, District of Columbia, and the U.S. territories. Under the expanded HHVBP Model, HHAs receive adjustments to their Medicare fee-for-service payments based on their performance against a set of quality measures, relative to their peers' performance.

III. CMS Quality Initiatives

The Centers for Medicare & Medicaid Services (CMS) establishes **quality initiatives** focusing on several key quality measures of healthcare. These quality measures provide a comprehensive understanding and evaluation of the care an organization delivers, and responses from the patients who received care. These quality measures evaluate many areas of

healthcare, including the following (Centers for Medicare and Medicaid Services, 2022b):

- Health outcomes
- Clinical processes
- Patient safety
- Efficient use of healthcare resources
- Care coordination
- Patient engagement in their own care
- Patient perceptions of their care

These measures of quality focus on providing the care the patient needs when the patient needs it in an affordable, safe, and effective manner. It also means engaging and involving the patient, so they take ownership of their care at home.

IV. Accreditation

Accreditation is a review process that determines if an agency meets the defined standards of quality determined by the accrediting body. The quality standards vary depending on the accrediting organization, but they all share common goals to improve efficiency, equity, and delivery of high-quality care. The main accrediting organizations for healthcare are as follows:

- The Joint Commission

- National Committee for Quality Assurance
- American Medical Accreditation Program
- American Accreditation Healthcare Commission

V. Core Measures

Core measures are national standards of care and treatment processes for common conditions. These processes are proven to reduce complications and lead to better patient outcomes. Core measure compliance reports show how often a hospital successfully provides recommended treatment for certain medical conditions. In the United States, hospitals must report their compliance with core measures to the Joint Commission, CMS, and other agencies (Johns Hopkins Medicine, 2023).

In November 2003, The Joint Commission and CMS began to align common core measures to be identical. This work resulted in the creation of one common set of measures known as the [Specifications Manual for National Hospital Inpatient Quality Measures](). Both organizations use these core measures to improve the healthcare delivery process. Examples of core measures include guidelines regarding immunizations, tobacco treatment, substance use, hip and knee replacements, cardiac care, strokes, treatment of high blood pressure, and the use of high-risk medications in the elderly. Healthcare providers must be aware of core measures and ensure the care they provide aligns with these recommendations (The Joint Commission, 2023a).

VI. Patient Safety Goals

Patient safety goals are guidelines specifically for organizations accredited by The Joint Commission that focus on healthcare safety problems and ways to solve them. The National Patient Safety Goals (NPSG) were first established in 2003 and are updated annually to address areas of national concern related to patient safety, and promote high-quality care. The NPSG provides guidance for specific healthcare settings, including hospitals, ambulatory clinics, behavioral health, critical access hospitals, home care, laboratory, skilled nursing care, and surgery. Documentation in the electronic medical record is primarily used as evidence that an organization is meeting these goals. The following goals are some examples of NPSG for hospitals (The Joint Commission, 2023b):

- Identify patients correctly
- Improve staff communication
- Use medicines safely
- Use alarms safely
- Prevent infection
- Identify patient safety risks
- Prevent mistakes in surgery

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://pressbooks.uwf.edu/ushealthcaresystem/?p=836#h5p-30

Click here to move on to 4.4 Cost of Care.

4.4 COST OF CARE

Sections:

4.4.1 Health Spending

The United States (U.S.) spends more per capita on healthcare than any other comparable high-income country and continues to spend more on healthcare at an unsustainable rate (Organization for Economic Co-operation and Development [OECD], 2018; PWC Health Research Institute, 2022). In 2021, nearly 4.3 trillion dollars were spent by uninsured individuals, private health insurers, and federal and state governments on health consumption expenditures, accounting for approximately 18.3% of the nation's gross

domestic product (Centers for Medicare & Medicaid Services [CMS], 2022c; Wager et al., 2022). Moreover, following the COVID-19 pandemic, the U.S. spent nearly 10% more on healthcare, totaling more than 19% of its gross domestic product (Wager et al., 2022; CMS, 2022c). The gross domestic product (GDP) is the total monetary or market value of all the finished products and services produced within a country during a specified time frame. In other words, the GDP provides a scorecard of a country's economic health.

Healthcare spending is closely tied to a country's wealth; however, comparing health expenditures across countries can be complicated due to unique health system structuring, the political landscape, and economic features that affect each country's spending (Wager et al., 2022). The OECD consists of 38 countries with above-median national and per-person incomes that commit to democratic and market principles enabling comparisons to be drawn on the political and economic experiences between the high-income nations (Wager et al., 2022). As previously mentioned, the U.S. spends more on healthcare than all other countries in the OECD, while some countries, such as Turkey, spend as little as 4% of their GDP on healthcare. In 2020, the U.S. spent $11,945 on health expenditures per person, nearly twice as much as the average $5,736 the other high-income OECD countries spent on health per person (Fig. 4-5). Although health spending increased between 2019 and 2020 for all developed nations

following the global pandemic, the U.S. was already spending the most per capita on health (Wager et al., 2022).

Figure 4-5

Health System Tracking

(Peterson-KFF Health Systems Tracker, 2023)

One reason we spend so much on healthcare in the U.S. is that high-quality care is at least in part a luxury good – something that we spend relatively more on as our income increases (like newer cars or a larger house). Yet even across relatively affluent countries, healthcare takes very different forms. Compare, for example, the U.S. and Canada. Canada has a system in which the government pays for healthcare. The program is financed by the payment of taxes to the government. The government sets doctors' fees, which limits competition within the health industry. Furthermore, other developed countries spend much less on healthcare than the

U.S., but have health outcomes that are as good as or even better than those in the U.S (Cooper & Taylor, 1994). "For example, life expectancy at birth in the U.S. was 77 years in 2020 — three years lower than the OECD average. Provisional data shows life expectancy in the U.S. dropped even further in 2021" (National Center for Health Statistics, 2022).

Differences in both the quality and cost of healthcare mean that, perhaps surprisingly, people travel to other countries to obtain treatments that are unavailable in their home countries. For example, US residents sometimes travel to other countries to obtain stem-cell treatments banned in the United States. Or people may seek healthcare in other countries simply because it is cheaper: people from around the world travel to Thailand, for example, to obtain cheap and reliable dentistry services. There are even tour operators that arrange such **medical tourism** trips. National Public Radio (NPR) published a story on March 18, 2008 about a husband and wife going to China to get stem-cell treatment for their 7-month-old daughter (Lim, 2008). There is also a company that organizes trips to Canada (Find Private Clinics.ca, 2023).

Definition: *Medical tourism* is when a patient intentionally crosses a border to seek medical

care that will typically require out-of-pocket payment for services (De Arellano, 2007).

4.4.2 Cost Drivers

What determines the cost of healthcare? There are several national trends affecting the cost of healthcare. These include the aging population, increased costs of medical technology, increased prescription medication costs, the Patient Protection and Affordable Care Act, and social determinants of health.

I. Aging Population

As demonstrated in Figure 4-6, the U.S. has a growing number of older adults (age 65 years or older) living longer than previous generations. As a result, older adults are anticipated to make up more than 20% of the U.S. population by 2030 (Agency for Healthcare Research and Quality [AHRQ], n.d.). This demographic change will result in increased national healthcare costs because older adults typically experience more chronic conditions than younger populations, requiring expensive specialty and long-term care (AHRQ, n.d.).

Figure 4-6

A Growing Population of Older Adults
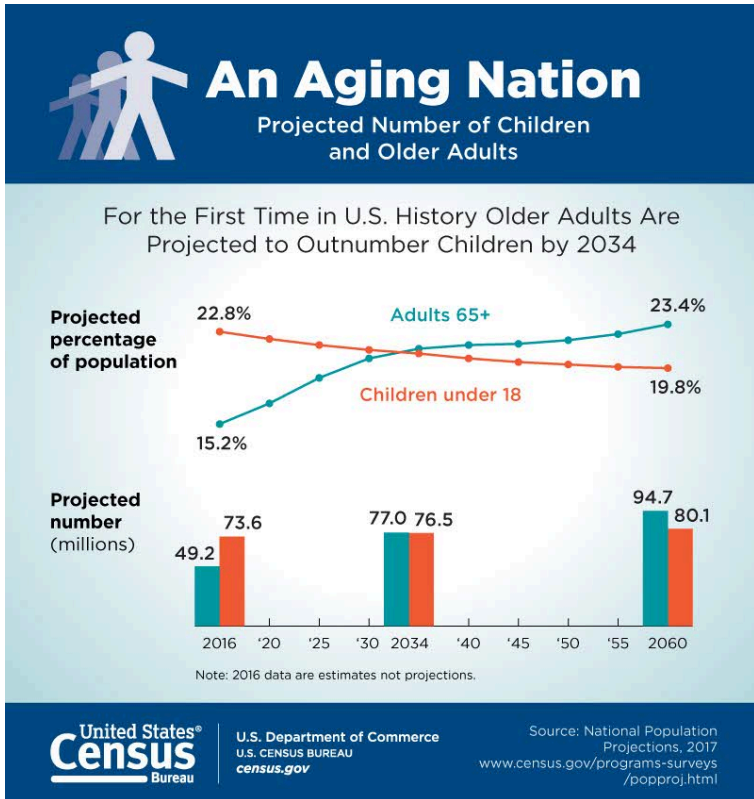
(U.S. Census Bureau, 2018)

II. Increased Costs of Medical Technology

Highly visible medical technologies, such as organ transplantation, diagnostic imaging systems, and

biotechnology products, attract both praise and blame. Evolving medical technologies may save lives and improve a client's health status, but they are also viewed as a dominant cause of the continued escalation of medical costs. Research suggests that medical technology accounts for about 10% to 40% of the increase in healthcare expenditures over time (Neumann & Weinstein, 1991). These costs also lead to further ethical dilemmas as decisions regarding what scarce resources are provided to which patients are made. Medical technologies, especially new ones, must justify their costs in a climate of competing claims on limited resources. Resource allocation follows American society's objective of cost-effectiveness: if a new technology improves health outcomes at a lower cost than existing technologies, it should be adopted; otherwise, it should not (Neumann & Weinstein, 1991).

III. Increased Prescription Medication Costs

Retail prices for commonly-used prescription medications continue to increase twice as much as inflation, contributing to increased healthcare costs and making these life-sustaining medicines potentially unaffordable to many Americans. According to a recent AARP *Rx Price Watch* report, in 2020, prices for 260 commonly used medications increased by 2.9% while the general inflation rate was 1.3% (Bunis, 2021). For example, the cost of Symbicort, a medication used to treat asthma and COPD, increased 46%, from $2,940 to $4,282 (Bunis, 2021). See Figure 4-7 for an illustration related to spending on prescription drugs (Peterson-KFF Health Systems Tracker, 2023).

Although most Americans have either public or private insurance that helps them pay for medications, increased medication prices result in higher health insurance premiums and higher taxpayer costs for the Medicare and Medicaid programs. Some insurance companies only cover approved formulary medications (i.e., the list of generic and brand-name prescription medications covered by the insurance company). As a result, national organizations like the American Association of Retired Persons (AARP) advocate for national policy changes, such as allowing Medicare to negotiate the prices of prescription medications with drug companies and allowing private insurance plans to have access

to those lower prices (Bunis, 2021). Many consumers find themselves tasked with the difficult decision of purchasing expensive medication or going without prescribed medication and paying for their families' housing and food.

Figure 4-7

Spending on Prescription Drugs

HEALTH EXPENDITURES 1960 - 2021
On Retail Prescription Drugs by All Sources

U.S. $ Per Capita - Inflation Adjusted

● Retail Prescription Drugs

Retail Prescription Drugs Spending by All Sources, 1960-2021
U.S. $ Per Capita - Inflation Adjusted
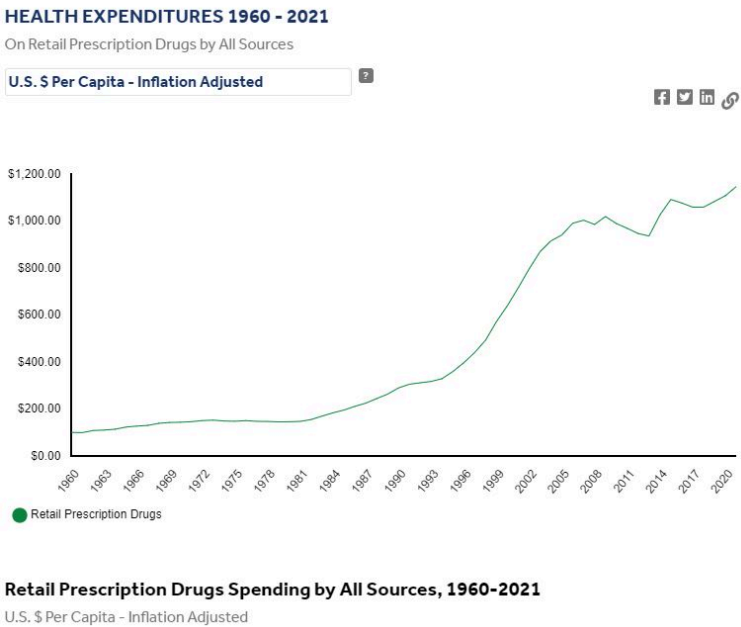
(Peterson-KFF Health Systems Tracker, 2023)

IV. Affordable Care Act

The Patient Protection and Affordable Care Act, also known as the **Affordable Care Act (ACA)**, was signed into law in

2010 (U.S. Department of Health and Human Services, 2022). This legislation aimed to increase consumers' access to healthcare coverage and protect them from insurance practices that restricted care or significantly increased the cost of care. The ACA mandated health insurance coverage for employers and individuals. Employers were mandated to provide healthcare coverage based on the number of their employees. Individuals who were not covered through employer insurance plans were mandated to seek coverage through a newly created Marketplace. The Marketplace provides a central website that offers three standard health insurance coverage levels to facilitate comparison by consumers. As a result of the ACA and associated Medicaid expansion, 32 million people had healthcare coverage in 2021 (HealthCare.gov., n.d.; U.S. Department of Health and Human Services, n.d.-d).

Key provisions of the ACA

The ACA includes the following key provisions (U.S. Department of Health and Human Services, 2022):

- Insurers can no longer deny coverage or care for preexisting conditions like diabetes, asthma, and cancer.
- Young adults may remain on their parent's insurance plans until they are 26 (even if they are married, financially independent, or not living with their parents).
- Health insurance plans cannot place annual or lifetime

limits on coverage except for nonessential exceptions, such as cosmetic procedures.

- Many preventive services must be provided, such as:
  - Well-child visits, flu shots, and other common vaccines
  - Screening tests for blood pressure and diabetes
  - Diagnostic screening tests, such as mammograms, and colonoscopies
  - Counseling services related to mental health and substance use

The ACA also allows consumers to appeal to insurance companies for denials of care or payment of services, and restricts situations in which an insurance carrier may cancel a policy.

Challenges to the ACA

Although the ACA has significantly increased the number of Americans with health insurance coverage, it continues to be debated. Debates focus on increased taxes, increased insurance premiums, and some people's belief that mandated coverage is a governmental intrusion on an individual's rights. The ACA has been challenged three times without success. In 2012 the U. S. Supreme Court upheld mandated coverage as a constitutional exercise of Congress's taxing powers because it could be interpreted as an individual's choice to maintain health insurance or pay a tax. However, in 2017 Congress set

the penalty for failing to comply with the mandate at zero dollars after multiple attempts to repeal and replace the ACA. In June 2021, the U.S. Supreme Court rejected a third major challenge regarding the constitutionality of the ACA. In a 7-to-2 decision, the U.S. Supreme Court upheld the ACA based on the judgment that the states who brought forth the case did not prove damage to citizens because the fines for not having health coverage had been eliminated since the original legislation was passed (K&L Gates LLP, 2021).

V. Social Determinants of Health

Social determinants of health (SDOH) are the conditions in the environments where people live, learn, work, and play that affect a wide range of outcomes. SDOH directly impact individuals' health behaviors, access to routine healthcare, and the development of chronic diseases. Yet, the U.S. spends a significantly lower percentage of its gross domestic product (GDP) on social services than similar countries with better health outcomes (Bush, 2018). Healthy People 2030, established by the U.S. Department of Health and Human Services, identifies public health priorities to help individuals, organizations, and communities across the U.S. improve health and well-being over the next decade by addressing SDOH. One of Healthy People 2030's goals states, "Create social, physical, and economic environments that promote attaining the full potential for health and well-being for all"

(Healthy People 2030, n.d.). SDOH includes healthcare access and quality, neighborhood and environment, social and community context, economic stability, and education access and quality (Fig. 4-8). These conditions have a major impact on people's health and well-being, ultimately affecting national healthcare costs (Healthy People 2030, n.d.).

Figure 4-8

Five Key Areas of Social Determinants of Health

Economic Stability	Education Access & Quality	Health Care Access & Quality	Neighborhood & Build Environment	Social & Community Context
• Employment • Income • Poverty • Housing Instability • Housing Quality	• Early Childhood Development & Education • Language & Literacy Skills • Highschool Graduation Rate • Enrollment in Higher Education	• Access to Primary Care • Access to Health Services • Health Literacy	• Access to Healthy Foods • Crime & Violence • Environmental Conditions • Food Insecurity • Transportation	• Civic Participation • Discrimination • Incarceration • Social Cohesion

(Healthy People 2030, n.d.)

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https://pressbooks.uwf.edu/ushealthcaresystem/?p=839#h5p-20

[Click here to move on to the Chapter Summary.](#)

4.5 CHAPTER SUMMARY

The Population Health Management (PHM) pathway has transitioned healthcare from a disease-only treatment model for individuals to a management model that requires clinical effectiveness, cost-effectiveness, and safer health outcomes. The latest version of our national public health objectives, Healthy People (HP) 2030, lists 355 core objectives ranging from reducing chronic diseases to mitigating contagious diseases. However, it was a seminal article that introduced one of the most important PHM components – the Triple Aim. The three pillars of the Triple Aim include improving the patient experience of care, improving the health of populations, and reducing the per capita cost of healthcare. Many people face barriers that prevent or limit access to needed healthcare services, which may increase the risk of poor health outcomes and health disparities. Barriers that prevent or limit access include lack of health insurance, poor access to transportation, and limited healthcare resources. Sometimes people don't get recommended health care services, like cancer screenings, because they don't have a primary care provider or live too far away from health care providers who offer them. Further research is needed to better understand the barriers to primary care and develop

interventions that expand access. Health literacy, or the ability to find, understand, and use information and services to inform health-related decisions and actions, is another barrier to accessing healthcare. It results from both individual capacities (i.e., personal health literacy) and the complex demands of the U.S. healthcare system (i.e., organizational health literacy).

Healthcare quality is care that is safe, effective, patient-centered, timely, efficient, and equitable. Four widely utilized improvement methodologies to improve processes and healthcare quality include Plan-Do-Study-Act, Six Sigma, Lean, and Lean Six Sigma. The cycle of PDSA allows for refinement of the change to implementation on a broader scale after successful changes have been identified. Six Sigma uses a measurement-based strategy for process improvement and problem reduction applied to improvement projects. The core principle of Lean is to reduce and eliminate non-value-adding activities and waste. The combination, Lean Six Sigma, has resulted in superior results to what either program could have achieved alone. Quality measures in healthcare include the Magnet Recognition Program, value-based reimbursement models, CMS quality initiatives, the accreditation review process, core measures, and patient safety goals.

The United States (U.S.) spends more per capita on healthcare than any comparable high-income country. Although other comparable countries spend much less on healthcare than the U.S., health outcomes in these countries

are as good or even better than outcomes in the U.S. The national trends affecting the cost of healthcare in the U.S. include the aging population, medical technology costs, prescription medication costs, Patient Protection and Affordable Care Act, and social determinants of health.

Key terms included in this chapter are also listed in the Glossary at the end of the book.

Click here to view the references and attributions from Chapter 4.

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[Click here to move on to Chapter 5: Current Issues in Healthcare Policy.](#)

CHAPTER 5: CURRENT ISSUES IN HEALTHCARE POLICY

Learning Objectives

- Examine the basis for government intervention in the market for healthcare services, as well as the forms of intervention.
- Explore the Patient Protection and Affordable Care Act as a policy that has been adopted in the United States with the intention of improving healthcare delivery, access, or outcomes.
- Outline the legislation and programs developed to decentralize risk from the

healthcare payer to providers of healthcare services.

Chapter Sections:

5.1 GOVERNMENT POLICY

Sections:

5.1.1 Why Do Governments Intervene?

Government involvement in the economy is typically analyzed through the lens of market failure. However, when it comes to healthcare, there are several market failures to consider.

I. Externalities

One argument for public involvement in healthcare is the

presence of externalities. If one individual is sick, then the likelihood that others around that person get sick increases. Individuals typically make decisions about their healthcare without thinking much about the effects of their decisions on the welfare of others. For example, a person may decide to go to work even though they are suffering from the flu because of financial strains, and may not think very much about the likelihood of infecting others. This scenario is a classic example of an externality.

II. Commitment

Through legislation passed in 1986, hospitals are required to treat patients *in emergency situations* whether or not they have insurance. The regulation is called the **Emergency Medical Treatment and Labor Act,** also known as**EMTALA** (Centers for Medicare & Medicaid Services, n.d.-a). Although the regulation applies only to those hospitals that accept Medicare, it is almost universal. Treating the uninsured is an inefficient way for a hospital to treat people. One consequence is that the uninsured are incentivized to seek routine care in hospital emergency rooms, even though this is an expensive place to provide care. Suppose hospitals could commit to only serving those with health insurance to ensure they are paid for the delivery of care. In that case, some of the uninsured might be induced to purchase health insurance instead of relying on emergency departments for routine care. However, hospitals

cannot make such a commitment, and it would run counter to the **Hippocratic Oath**. "The Hippocratic Oath is perhaps the most widely known of Greek medical texts. It requires a new physician to swear upon a number of healing gods that he will uphold a number of professional ethical standards" (National Institutes of Health, 2012).

Review fact sheet (Centers for Medicare & Medicaid Services, n.d.-a): [Know Your Rights: Emergency Medical Treatment and Labor Act (EMTALA)](#)

Review webpage (National Institutes of Health, 2012): [Hippocractic Oath](#)

III. Adverse Selection and Moral Hazard

These concepts were presented in Chapter 3: Health Insurance. Please review [3.1.2 Adverse Selection](#) and [3.1.3 Moral Hazard](#).

IV. Drug Quality & Doctor Quality

The healthcare market is filled with gaps in information. As a result, patients and even their doctors cannot fully assess the safety and efficacy of pharmaceutical products. Although drug companies test their own products, the government has a role in assessing this information and determining the safety and effectiveness of medications.

Another informational problem in the healthcare market is a patient's inability to properly evaluate the quality of a doctor. A patient can look at some indications of their doctor's ability, such as years of practice, school of graduation, and the number of people in the waiting room. But it is impossible to make a fully informed judgment about the quality of a doctor. Again, the government plays a role by requiring that doctors obtain specialized training and pass a licensing examination before they are allowed to practice.

V. Patents

According to the World Intellectual Property Organization (n.d.):

> A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application.

The investment into the research and development needed to create a new drug is substantial. The patent system exists to protect firms from potential competitors producing the same product and selling it at a lower price, which could negatively impact the firm's ability to earn a return on the investment. Although price competition may be valued from a consumer's point of view, it destroys the initial incentives a firm has to

undertake for research and development. Therefore, governments provide patent protection for a period of time to induce firms to make substantial investments in research and development.

VI. Market Power

Market outcomes are inefficient when there are relatively few sellers of a product. This situation may occur in various healthcare markets because there may be relatively few doctors and few hospitals in a given location. Furthermore, pharmaceutical companies have market power based on exclusive knowledge of their specific product, as protected through patents. Finally, there are relatively few health insurance providers, and some are very large.

VII. Equity and Fairness

One argument for government involvement is to provide for a more equitable allocation of goods and services. From this perspective, the fact that many Americans lack health insurance and adequate healthcare is also a basis for government involvement. According to the United Nations (n.d.), Article 25 of the Universal Declaration of Human Rights includes the right to healthcare:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and their family,

including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

5.1.2 How Does the Government Intervene?

The government intervenes through tax free health insurance benefits and income taxes, reguations that influence market demand and supply, the provision of public health insurance, and the provision of health information.

I. Taxes and Subsidies

As previously mentioned, one of the key ways in which the government subsidizes healthcare is by allowing employees tax-free health insurance benefits provided by an employer. In this way, the government reduces the cost of firm-provided healthcare. It is now common for employment contracts in the United States to include a provision for healthcare.

One of the main issues surrounding employer-provided health insurance is the possibility of losing insurance when a person changes jobs (sometimes called the "portability problem"). In our economy, shifts in demand for goods and services and changes in productivity naturally lead to the

creation of new jobs by some firms and the destruction of jobs by other (perhaps less profitable) firms. Therefore, the efficient working of an economy requires that workers leave old jobs for new ones. Unfortunately, insurance can get in the way of worker mobility. If a person has a job with health insurance, quitting their job to look for another may be costly for several reasons. First, they may lose insurance coverage while they are searching for a new job. Second, an ailment covered by insurance in their previous position could be viewed as a preexisting condition when they apply for insurance at a new firm. A preexisting condition can adversely affect insurance rates and coverage types. In some cases, people choose not to change jobs purely because of the implications on health insurance.

Healthcare is also subsidized through income taxes. If a person itemizes deductions for a taxable year, they may be able to deduct the expenses paid that year for medical and dental care for themselves, their spouse, and their dependents. Medical care expenses include payments for the diagnosis, cure, mitigation, treatment, or prevention of disease, or payments for treatments affecting any structure or function of the body (Internal Revenue Service, 2023).

II. Regulation

Government regulations are common in the health industry.

These regulations influence both demand and supply in this market.

On the demand side, households are required to obtain certain medical services. For example, it is common for schools to require some vaccinations prior to admission. The argument for such interventions is that there are externalities from a person's health to the health of others.

The government licenses or certifies many of the actors on the supply side of the healthcare market. This requirement is another form of quality control. Doctors who practice in a state must pass exams called medical boards. Hospitals are certified for the types of activities they offer. Often the certification occurs at the state level. Other providers of healthcare are also licensed. For example, a nursing home must be certified as a Medicare provider to receive reimbursements. The rationale for such interventions stems from the extensive information problems in the healthcare market. As consumers cannot accurately assess the quality of care provided by doctors and hospitals, the government provides a service to us all by regulating healthcare providers.

III. Provision of Insurance

The Department of Health and Human Services (HHS) is the federal agency that oversees the Center for Medicare and Medicaid Services, which administers programs for protecting the health of all Americans. Through its Medicare and

Medicaid programs and the Children's Health Insurance Program (CHIP), the government provides insurance to low-income, elderly, and disabled households.

There is continuing debate about expanding the availability of health insurance to the general population. A more fundamental question is whether the government should even be in the business of providing health insurance. One set of arguments for government involvement rests on the various market failures identified in this section. First, healthcare is complicated, and there are many ways in which healthcare markets depart from the competitive ideal. It is sometimes argued that spending on health services in the United States is very high because the market is inefficient. From that perspective, having the government in charge of this sector of the economy might reduce inefficiencies. Second, government involvement can be justified on the grounds of equity and fairness.

IV. Provision of Information

One of the primary roles of the government is to provide information to the public about health matters. Information comes in a variety of forms. In January 1966, the following warning first appeared on cigarette packs: "Warning: Cigarette Smoking May be Hazardous to Your Health." This initial warning from the Surgeon General's office of the United States was followed by many others concerning the consumption of

cigarettes and other potentially harmful products. Such warnings are a good example of government provision of information. Each consumer of these products wants to know the impact on health. Gathering such information is a public good because the information is available to everyone and can be "consumed" by everyone simultaneously. Another form of information is through drug testing. The US Food and Drug Administration is responsible for testing drugs before they appear on the market. The FDA also supplies public information about a wide range of food items.

Knowledge Check

Drag each concept to its corresponding column.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://pressbooks.uwf.edu/ushealthcaresystem/?p=1259#h5p-21

Click here to move on to 5.2 Patient Protection and Affordable Care Act.

5.2 PATIENT PROTECTION AND AFFORDABLE CARE ACT

Sections:

5.2.1 Background

The **Patient Protection and Affordable Care Act,** commonly referred to as the Affordable Care Act or "ACA" for short, was signed into law in 2010 (U.S. Department of Health and Human Services, 2022). The primary objective was to provide healthcare insurance for Americans who were

uninsured. Before many of its provisions took effect, it was estimated that 44 million Americans lacked health insurance (Garfield et al., 2019). The law also extended coverage by allowing those up to the age of 26 to remain on their parent's healthcare plans. In addition, it expanded Medicaid coverage to include those with incomes 133% or less of the national poverty level. It also prevented health insurance companies from kicking people out of their plans for pre-existing conditions.

Technologically, the ACA created an open market and access to it through an online portal, or health exchange, where Americans could purchase insurance. However, the law has seen many court challenges since its adoption, and the one area with the biggest point of contention was the "individual mandate." The individual mandate section of the law initially required individuals to have insurance, and if they didn't, they would be penalized. Legislation passed in late 2017 ended federal penalties beginning with the 2019 tax year; however, individual states can still impose a penalty.

The efforts of the ACA were not only to reduce the number of people without insurance but knowing that the uninsured were exceptionally costly to the system, reducing their numbers could then decrease the overall cost to the healthcare system. It also attempted to establish price transparency, which is the ability of consumers to find and compare pricing for healthcare services. The success of the ACA is still somewhat disputed; however, most sources agree that it did provide

health insurance to those who were previously not covered by a policy (Colla & Skinner, 2020).

5.2.2 Primary Goals & Provisions

I. Primary Goals

According to the U.S. Department of Health and Human Services (2022), the Patient Protection and Affordable Care Act has three primary goals:

- Make affordable health insurance available to more people. The law provides consumers with subsidies ("premium tax credits") that lower costs for households with incomes between 100% and 400% of the federal poverty level (FPL).
- Expand the Medicaid program to cover all adults with income below 138% of the FPL. Not all states have expanded their Medicaid programs.
- Support innovative medical care delivery methods designed to lower the costs of healthcare.

II. Provisions Related to the Triple Aim

The Triple Aim of Healthcare was first presented by the Institute for Healthcare Improvement in 2007 (Berwick et al., 2008). It was defined as an attempt to realign the three aims

of healthcare identified in an existing model known as the Iron Triangle. The Iron Triangle focused on three key aims of healthcare delivery: access, quality, and cost (Berwick et al., 2008). The Triple Aim has the three pillars: improving the patient experience of care, improving the health of populations, and reducing the per capita cost of healthcare.

The ACA achieved increased access 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. Other low income individuals received subsidies for purchasing private insurance. However, the poor living in states that did not expand Medicaid did not benefit from either of these two mechanisms. The ACA also included quality improvement measures. Improved medical care may result from the ACA's emphasis on primary care and Accountable Care Organizations (Centers for Medicare & Medicaid Services [CMS], 2019). The use of comparative effectiveness (although not cost-effectiveness) information was encouraged. Incentive systems in some programs 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. Lastly, proponents of the ACA also claim the Act 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. These provisions will be covered in more detail in the sections below.

Increased 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 and tobacco use within a specific family size and 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. In addition, discrimination based on gender or health status (an individual's health history) is prohibited for plans sold on the ACA insurance markets. An annual ceiling of approximately $7,900 for out-of-pocket (OOP) costs (i.e., deductibles, copayments, 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", which are those people with less than adequate coverage (Commonwealth Fund, 2010a). States had an important role in setting up and implementing these standards.

The ACA mandated that every resident must have health insurance starting in 2014. However, there were exemptions for those with moral or religious objections, American Indians, undocumented immigrants, those in prison, those who can prove that the lowest cost plan option exceeds 8% of their income, 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, 2011).

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 who choose to forgo health insurance legally and without penalty 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.

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. However, a range of options was available to states. There was no deadline for states to make choices about Medicaid expansion; some did so later, 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 (Kaiser Family Foundation, 2019a).

Because the funding for Medicaid expansion was largely the federal government's responsibility, states had the incentive to participate. "Specifically, for people who became newly eligible for Medicaid under the expansion, the federal government covered 100% of costs from 2014 through 2016, declining to 90% of costs in 2020" (Congressional Budget Office [CBO], 2012a, p. 9).

It is not entirely certain how much the Supreme Court's 2012 decision to not require states to expand Medicaid reduces access to health insurance for the poor (CBO, 2012b). While many of the poorest individuals live in states that have not expanded Medicaid, many with incomes below 100% of the federal poverty level (FPL) remain 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). Individuals were also exempt from purchasing insurance for other reasons.

Review chart book (Center on Budget and Policy Priorities, 2020): [Benefits of The Affordable Care Act's Medicaid Expansion](#)

Most people in the United States obtain health insurance through their employers, which continued after the ACA was adopted. Employers with 50 or more full-time employees who did not offer insurance were obliged to pay the 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 they were exempt from the penalties even if they did not offer insurance.

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 partnered with the federal government to organize and implement an ACA marketplace (Mercer, 2013). States that partnered were permitted to alter these decisions and take over the responsibility at any time.

Quality Improvement Measures

The ACA contains measures 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, 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, 2011). It also discouraged the overuse of medical

care (Jacobs & Skocpol, 2010) and set forth a national strategy for quality improvement. In addition, increased reimbursement for primary care providers were included to encourage medical students to choose these specialties.

Accountable Care Organizations (ACOs) aim to improve quality and reduce costs in the Medicare program and private sector by promoting integrated healthcare and including various methods of linking payment to outcomes. As a result, 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 in a policy with an ACO contract has grown from a few million to over 32 million, covering 10% of the population (Muhlestein et al., 2017, 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 (Agency for Healthcare Research and Quality [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.

In 2011, a Center for Medicare and Medicaid Innovation Program was set up to undertake pilot programs and demonstration projects that reward doctors and hospitals for quality healthcare (Zezza et al., 2011). Starting in 2015, the ACA began denying federal payments for Medicare services 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 centers. The goal was for Medicare to become an active purchaser of higher-quality health services, which could both reduce costs and improve the quality of care (CMS, n.d.-b).

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 available to them. Unfortunately, many health plans do not do a sufficient job of monitoring the 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.

Control Rising Healthcare Costs

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 et al., 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 of the ACA was that it would increase the price of premiums. While average premium increases vary year to year, overall marketplace premiums increased by 75% between 2014 and 2019 (Kaiser Family Foundation, 2019b). 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 increased 16% in Delaware.

Items in the ACA intended to protect against increases in the national deficit include productivity improvement incentives, reductions in subsidies to Medicare Advantage programs (Biles et al., 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. The law also includes bundled hospital payment systems and revenue from a surtax imposed on unearned investment income on wealthy taxpayers to reduce costs. Finally, other financing mechanisms in the law include a 40% excise tax (i.e., 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).

Key Term

Episode of Illness. A specific medical condition or problem of expected limited duration.

The ACA **Bundled Payments for Care Improvement Initiative** 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. Traditionally, providers have been paid separately for each service received by a patient, a practice that some believe increases costs (U.S. Department of Health and Human Services, 2011).

An ACA provision requires insurers 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 policyholders and quality improvement (Tolbert, 2015). This requirement is known as the **medical loss ratio (MLR)**. The MLR refers to the fact that money spent on medical care, rather than administration, represents a 'loss' to insurers. The MLR encourages health insurance companies to "eliminate wasteful administrative spending and increase the value consumers receive for their premium dollars" (Harrington et al., 2012).

Some administrative provisions of the ACA 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, and penalties for violations of administrative record-keeping (CMS, n.d.-c).

Review report (Tolbert, 2015): [Coverage Provisions in the Affordable Care Act, An Update](#)

5.2.3 Current Status

Review survey brief (Commonwealth Fund, 2019): [Health Insurance Coverage Eight Years After the ACA](#)

Knowledge Check

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://pressbooks.uwf.edu/ushealthcaresystem/?p=1265#h5p-39

[Click here to move on to 5.3 Value-Based Contracting in Healthcare.](#)

5.3 VALUE-BASED CONTRACTING IN HEALTHCARE

Sections:

5.3.1 Background

At its most fundamental, health risk (either clinical or financial) is a combination of two factors: the **amount of loss** and the **probability of occurrence**. *Loss* occurs when an individual's post-occurrence state is less favorable than the pre-occurrence state. Financial risk is a function of loss amount

and probability of occurrence, or in actuarial terminology, the frequency and severity of the loss. In the United States (U.S.), health risk has historically been the responsibility of payers (i.e., insurers, government programs, and employers). Healthcare payers have traditionally managed risk by combining pricing, underwriting, reinsurance, and claims management.

With the enactment of the HMO Act of 1973, **managed care** was developed in the 1990s as a series of initiatives designed to better manage the health of covered individuals and reduce unnecessary medical claims costs. The original approaches included **network management**, which is the process of identifying and contracting with preferred providers who offer either lower fees or lower utilization of services and steering patients to them, through benefit design or by requiring referrals. It also included **utilization management** throughpre-authorization or concurrent review of hospital admissions.

> **Definition: *Utilization management*** is "the evaluation of the medical necessity, appropriateness, and efficiency of the use of healthcare services, procedures, and facilities under the provisions of the applicable health benefits plan, sometimes called utilization

review" (Matthews, 2016).

In a quest for savings, these models devolved into restricting services and denials of care. Because of consumer reaction to the perceived restrictions and denials that resulted from these interventions, managed care plans began to seek other solutions to contain rapidly increasing costs. Techniques favored for managing utilization include implementing programs that encourage members to take responsibility for their own health. Other techniques aim to educate physicians in the most cost-effective, evidence-based treatments, such as chronic disease management and case management.

The chronic disease management programs of the early 2000s were implemented by payers and aimed to identify high-risk or high-need patients, particularly those who were not compliant with their treatments or had gaps in care. Patient management was usually performed externally, often via telephone, by nurses employed at large disease management organizations. Although attempts were made to involve the patient's providers, providers were not party to the payer contract. This model peaked with several Medicare Coordinated Care and Support demonstration programs between 2005 and 2008 (Nelson, 2012; Peikes et al., 2008).

Because of the growth and importance of chronic disease

management programs, the Centers for Medicare and Medicaid Services (CMS) established a major demonstration project, the Medicare Coordinated Care Project, to evaluate 15 different care coordination models (Peikes et al., 2008, 2009). Although the demonstration program showed some improvement in the quality of care delivered to patients, the lack of demonstrated savings led to a decline in the type of vendor-based disease management programs popular up to that time. It also led to an interest in programs that involved contracting directly with providers to take the risk for patient outcomes.

By the end of the first decade of the 21st Century, two things began to become clear: first, these programs were not containing medical costs, and second that the solution to rising costs had to include providers (Peikes et al., 2008). As a result, CMS's attention shifted to alternative payment models incorporating providers directly and focusing on a combination of cost, quality, and patient satisfaction (i.e., the Triple Aim). This shift was a reaction to the quality of care delivered within the U.S. Healthcare system. A study by McGlynn et al. (2003) found that adults in the U.S. receive the generally accepted standard of preventive, acute, and chronic care only about 55% of the time. In addition, quality of care "varied substantially according to the particular medical condition, ranging from 78.7% of recommended care to 10.5% of recommended care for alcohol dependence" (McGlynn et al., 2003).

Pay for quality was intended to increase the frequency of these measures by rewarding physicians for their achievement of evidence-based quality measures (such as screenings, tests for patient populations, or adherence to prescriptions). The theory was that closing gaps in care and identifying health issues earlier would lead to reduced utilization of more expensive healthcare services later. The achievement of reduced cost of care in exchange for incentive payments made this a value-based initiative. Following the failure of the disease management model to demonstrate financial success, Congress passed several laws promoting different value-based initiatives, in addition to initiatives introduced by the Center for Innovation at CMS. These initiatives (in chronological order) include:

- Medicare Improvements for Patients and Providers Act (MIPPA) 2008;
- Affordable Care Act (ACA) 2010;
- Bundled Payments for Care Improvement (BPCI and its successors) 2011;
- Protecting Access to Medicare Act (PAMA) 2014;
- The Medicare Access and CHIP Reauthorization Act (MACRA) 2015;
- Medicare's direct contracting model: Global and Professional Direct Contracting Model (GPDC) 2020;
- Accountable Care Organization Realizing Equity, Access, and Community Health Model (ACO

REACH) 2023.

In addition, CMS has introduced a number of alternative payment models (APMs). In these models, providers agree to accept a portion of their reimbursement, often in the form of a share of savings, based on the achievement of certain goals, including improved quality, reduced utilization, and reduced cost. APMs include Accountable Care Organizations (ACOs) as well as models aimed at specific conditions or provider organizations: Bundled Payments for Care Improvement (BPCI), Comprehensive Care for Joint Replacement, Comprehensive Primary Care, Comprehensive End-stage Renal Disease model, Kidney Care Choices model, and the Oncology Care Model (OCM). CMS's stated objective is to move the entire healthcare market toward paying providers based on the quality rather than the quantity of care they give patients (Peikes et al., 2009).

5.3.2 Types of Value-Based Contracts

Werner et al. (2021) noted that, "the complexity of the current suite of alternative payment models" and the variety and lack of standardization of different models make value-based contracting challenging. Figure 5-1 illustrates the development and growth of alternative payment models. Over time, models have become more comprehensive, and the risk assumed by

providers and healthcare management organizations (HCMs) has increased.

Figure 5-1

Risk and Value-Based Contract Types
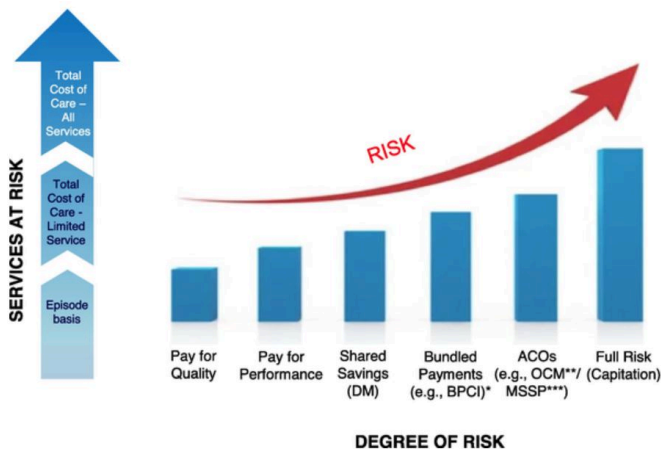
(Duncan, 2022)

*BPCI: Bundled Payment for Care Improvement; **OCM: Oncology Care Model; ***MSSP: Medicare Shared Savings Program.

Figure 5-1 also illustrates the two dimensions of risk that are accepted by a provider or HCM: the x-axis indicates increasing degrees of financial risk, from none (i.e., supplemental pay for performance payments on top of regular provider reimbursement) to capitation (i.e., the potential for significant gain but also losses). The y-axis illustrates the extent of the services at risk incorporated in the contract. The extent of services at risk may range from a risk limited to a single episode

of care only (e.g., knee surgery) to population risk in which the provider or HCM accepts financial risk for all expenses incurred by the target population.

I. Pay for Quality & Pay for Performance

According to Magill (2016), the original reimbursement model (i.e., fee-for-service) can be traced back "to to the origins of Blue Cross Blue Shield insurance in the 1930s." In the fee-for-service (FFS) reimbursement model, each time the patient received a service from a physician, hospital, or pharmacist, a bill was generated and then paid by the patient or the payer (or both). As this system began to impose a financial strain on payers, different models evolved, beginning with payment for quality. Unfortunately, while these models improved quality metrics such as HEDIS – NCQA, they did not significantly reduce healthcare costs (McGlynn et al., 2003).

Closely aligned with pay for quality models is pay for performance, in which physicians are rewarded for patient metrics (such as mammograms for women, eye and foot exams for people with diabetes, etc.). The foundation of effective pay for performance initiatives is a collaboration with providers and other stakeholders to ensure that valid quality measures are used, that providers aren't being pulled in conflicting directions, and that providers have support for achieving actual improvement.

II. Shared Savings

The big breakthrough in terms of financial risk transfer occurred with disease management programs in the early 2000s. Insurers that purchased disease management programs from vendors needed assurance that the programs would reduce medical costs. Lacking convincing randomized studies, vendors and payers contracted around a financial outcome; initially, vendors put a portion of their fees at risk of a favorable financial outcome. Later models allowed vendors to share in actual savings generated (i.e., gain-sharing) to the extent that the vendor reduced costs below a target (Duncan, 2014). There are different variations of gain-sharing models, with some being one-sided so only positive savings are shared. In contrast, others are two-sided so that if costs increase relative to the target, the vendor must reimburse some of the excess.

III. Bundled Payments

Traditionally, Medicare makes separate payments to providers for each of the individual services they furnish to beneficiaries for a single illness or course of treatment. This approach can result in fragmented care with minimal coordination across providers and health care settings. Payment rewards the quantity of services offered by providers rather than the quality of care furnished. "Research has shown that bundled payments can align incentives for providers – hospitals, post-

acute care providers, physicians, and other practitioners – allowing them to work closely together across all specialties and settings" (CMS, 2022a).

"The Centers for Medicare and Medicaid Services Innovation Center introduced the Bundled Payments for Care Improvement (BPCI) initiative in 2011 as one strategy to encourage healthcare organizations and clinicians to improve healthcare delivery for patients" (Hardin et al., 2017). This initiative tested four broadly defined models of care, which linked payments for the multiple services beneficiaries received during an episode of care (CMS, 2022a). Under the initiative, organizations entered into payment arrangements that included financial and performance accountability "for the full spectrum of delivery—both acute and postacute—as a single episode of care, defined as all related services up to 90 days after hospital discharge to treat a clinical condition or procedure" (Hardin et al., 2017).

The Bundled Payments for Care Improvement Advanced Model (BPCI Advanced) is a new iteration of this initiative. The BPCI Advanced Model launched with its first cohort of providers on October 1, 2018 and the period of performance ends on December 31, 2025 (Centers for Medicare & Medicaid Services, 2020). The Avanced Model aims to support healthcare providers who invest in practice innovation and care redesign to better coordinate care and reduce expenditures, while improving the quality of care for Medicare beneficiaries. BPCI Advanced qualifies as an APM under the

Quality Payment Program. The overarching goals of the BPCI Advanced Model are (Centers for Medicare and Medicaid Services, 2023):

- Care Redesign
- Health Care Provider Engagement
- Patient and Caregiver Engagement
- Data Analysis/Feedback
- Financial Accountability.

An independent evaluation in 2020 (i.e., after two years) found (Centers for Medicare & Medicaid Services, 2020):

> Early evidence from the independent evaluation of the BPCI Advanced Model indicates that participating hospitals reduced Medicare FFS payments for most of the clinical episodes evaluated while maintaining quality of care. However, Medicare experienced net losses in the first ten months of the model after accounting for reconciliation payments. This underscores the challenges of identifying appropriate benchmarks in setting target prices within a prospective payment framework.

Review the BPCI findings at-a-glance (Centers for Medicare & Medicaid Services, 2020): BPCI Advanced Year 2 Report – Findings at-a-Glance

IV. Accountable Care Organizations

The Affordable Care Act introduced Accountable Care Organizations (ACOs): provider groups that accept payment risk for their attributed populations in return for the opportunity to share savings when costs are reduced below an adjusted benchmark (United States Congress, 2010). In the original model, providers only accepted upside risk (shared savings only). In later models, providers could achieve a greater share of savings but at the cost of having to also share losses. ACO arrangements exist among all payers and payer types, including commercial insurers, traditional Medicare, and Medicaid. CMS's Oncology Care Model is a similar initiative but limited to cancer patients undergoing treatment by oncologists.

V. Capitation

All these models involve some sharing of risk between the payer and providers. However, full risk transfer is achieved with capitated models. With capitation, the provider accepts full financial responsibility for all costs of a population or sub-population (e.g., primary care only). "Capitated managed care is the dominant way states deliver services to Medicaid enrollees. States pay Medicaid managed care organizations (MCOs) a set per member per month payment for the

Medicaid services specified in their contracts" (Hinton & Musumeci, 2020).

> **Definition:** *Capitation* is a way of paying healthcare providers or organizations in which they receive a predictable, upfront, set amount of money to cover the predicted cost of all or some of the healthcare services for a specific patient over a certain period of time (CMS, n.d.-d).

5.3.3 What are Value-Based Programs?

There are five original value-based programs; their goal is to link provider performance of quality measures to provider payment (CMS, 2022b):

1. **End-Stage Renal Disease Quality Incentive Program (ESRD QIP):** The CMS administers the ESRD QIP to promote high-quality services in renal dialysis facilities. The first of its kind in Medicare, this program changes how CMS pays for the treatment of patients who receive dialysis by linking a portion of

payment directly to facilities' performance on quality of care measures. These types of programs are known as "pay for performance" or "value-based purchasing" (VBP) programs.

2. **Hospital Value-Based Purchasing (VBP) Program:** The Hospital VBP Program rewards acute care hospitals with incentive payments for the quality of care provided in the inpatient hospital setting. This program adjusts payments to hospitals under the Inpatient Prospective Payment System (IPPS) based on the quality of care they deliver.

3. **Hospital Readmission Reduction Program (HRRP):** HRRP is a Medicare value-based purchasing program that encourages hospitals to improve communication and care coordination to better engage patients and caregivers in discharge plans and, in turn, reduce avoidable readmissions.

4. **Value Modifier (VM) Program (also called the Physician Value-Based Modifier or PVBM):** Mandated by the Affordable Care Act, this program seeks to financially reward physicians who provide healthcare that is high value-both high in quality, and low in cost.

5. **Hospital Acquired Conditions (HAC) Reduction Program:** The HAC Reduction Program encourages hospitals to improve patients' safety and reduce the number of conditions people experience during their

time in a hospital, such as pressure sores and hip fractures after surgery.

There are also other value-based programs (CMS, 2022b):

- **Skilled Nursing Facility Value-Based Purchasing (SNFVBP):** The CMS awards incentive payments to skilled nursing facilities (SNFs) through the SNF VBP Program to encourage SNFs to improve the quality of care they provide to Medicare beneficiaries. The SNF VBP Program performance is currently based on a single measure of all-cause hospital readmissions.
- **Home Health Value-Based Purchasing (HHVBP):** The overall purpose of the HHVBP Model was to improve the quality and delivery of home healthcare services to Medicare beneficiaries with specific goals to 1) provide incentives for better quality care with greater efficiency, 2) study new potential quality and efficiency measures for appropriateness in the home health setting, and 3) enhance the public reporting process.

What's the timeline for these programs (Fig. 5-2)?

Figure 5-2

CMS Value-Based Program Timeline

VALUE-BASED PROGRAMS

	2008	2010	2012	2014	2015	2018	2019
LEGISLATION PASSED	MIPPA	ACA		PAMA	MACRA		
PROGRAM IMPLEMENTED			ESRD-QIP / HVBP / HRRP	HAC	VM	SNF-VBP	APMs / MIPS

LEGISLATION
ACA: Affordable Care Act
MACRA: the Medicare Access & CHIP Reauthorization Act of 2015
MIPPA: Medicare Improvements for Patients & Providers Act
PAMA: Protecting Access to Medicare Act

PROGRAM
APMs: Alternative Payment Models
ESRD-QIP: End-Stage Renal Disease Quality Incentive Program
HACRP: Hospital-Acquired Condition Reduction Program
HRRP: Hospital Readmissions Reduction Program
HVBP: Hospital Value-Based Purchasing Program
MIPS: Merit-Based Incentive Payment System
VM: Value Modifier or Physician Value-Based Modifier (PVBM)
SNFVBP: Skilled Nursing Facility Value-Based Purchasing Program

(CMS, 2022b)

Knowledge Check

Find the missing words in the word search below:

1. At its most fundamental, health risk is a combination of two factors: amount of _____ and probability of _____.
2. The original approaches to managed care included _____ management and _____ management.
3. The _____ and lack of standardization of different _____ make value-based contracting challenging.
4. With capitation the provider accepts full _____

responsibility for all costs of a _____.

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Click here to move on to the Chapter Summary.

5.4 CHAPTER SUMMARY

Government involvement in the economy is typically analyzed through the lens of market failure. Market failures in healthcare include externalities, commitment, adverse selection, moral hazard, drug quality, doctor quality, patents, market power, equity, and fairness. Governments intervene by allowing employees tax-free health insurance benefits provided by an employer and subsidizing healthcare through income taxes. The government also intervenes through regulations that influence demand and supply by providing insurance and information to the public about health matters. The Patient Protection and Affordable Care Act was signed into law in 2010 to reduce the number of people without insurance and decrease the overall cost to the healthcare system. The three primary goals were to make affordable health insurance available to more people, expand the Medicaid program, and support innovative medical care delivery methods designed to lower healthcare costs. The provisions of the Act address the triple aim: increase access, improve the quality of care, and reduce the cost of care.

Payers are increasingly looking to providers to assume financial risk, in addition to the risk of clinical quality and outcomes of their managed populations. Numerous types of

contracts are being signed between providers and payers: pay for quality, pay for performance, shared risk and shared savings arrangements, bundled payments, accountable care, and capitation. A value-based initiative reduces the cost of care in exchange for incentive payments to providers. Laws and initiatives promoting different value-based initiatives include the Medicare Improvements for Patients and Providers Act (MIPPA), Affordable Care Act (ACA), Bundled Payments for Care Improvement (BPCI), Protecting Access to Medicare Act (PAMA), The Medicare Access and CHIP Reauthorization Act (MACRA), Medicare's direct contracting model: Global and Professional Direct Contracting Model (GPDC), and Accountable Care Organization Realizing Equity, Access, and Community Health Model (ACO REACH).

Key terms included in this chapter are also listed in the Glossary at the end of the book.

Click here to view the references and attributions from Chapter 5.

5.5 REFERENCES & ATTRIBUTIONS

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CHAPTER 6: TECHNOLOGY IN HEALTHCARE

Learning Objectives

- Define the major terms associated with health information technology.
- Examine the categories of innovative health information technologies that support safe and effective patient care.
- Summarize health information legislation created to improve the delivery of healthcare and protect confidential patient information.
- Describe developing health information technologies designed to change the way we safeguard human health.

Chapter Sections:

6.1 HEALTH INFORMATION TECHNOLOGY

Sections:

6.1.1 Background & Terminology

I. Background

Various health information technology (HIT) initiatives have emerged as part of the strategy to assist healthcare professionals in their daily duties and reduce the cost of care. High-income

countries, as well as low- and middle-income countries, are working to provide their healthcare systems with HIT. Beyond these efforts, researchers are working on innovative HIT to assist patients in managing their health conditions, accessing healthcare services, and assisting general physicians in their daily duties (Edoh & Teege, 2011; Shire & Leimeister, 2012; Yang et al., 2015).

Low and middle-income countries, and rural regions in high-income countries, are typically medically underserved and thus face poor access to healthcare services primarily because patients live far from care units (World Health Organization, 2017). In addition, rural regions in high-income countries mostly suffer from a low rate of physicians providing medical services in these regions (Edoh, 2018).

Overall, the primary healthcare sector is increasingly being provided with modern information systems that assist medical doctors in their daily duties by supporting them in decision-making, diagnosing, prescribing, and remote delivery of care to patients.

eHealth, mHealth, telehealth, and telemedicine are modern HIT-enabled tools aiming to provide better, more efficient, and more effective care services to the patient. Telehealth and telemedicine enable care service delivery regardless of the time zone, the geographic residence place of the patient, and his or her medical doctor(s). Rural regions (i.e., medically underserved), in particular, have taken advantage of these tools supporting remote care (Edoh et al., 2016).

HIT systems collect and provide medical information to medical doctors and the patient for self-management of his or her health conditions (e.g., glucometer for glucose testing and tensiometer for blood pressure monitoring). HIT also processes collected data to assist in decision-making. These data are stored in the electronic health record or electronic medical record. Evidence has shown the benefits of electronic medical records include reducing prescription errors and enabling inter- and extra-organizational information sharing (Adjerid et al., 2018; Hydari et al., 2019). Beyond decreasing the rate of prescription errors, the EHR could also be used to support accurate diagnosis-making and thus impact the patient's health outcomes.

II. Terminology

Digital health. Digital health is a broad, overarching term that includes categories such as eHealth, mHealth, HIT, wearable devices, telehealth and telemedicine, and personalized medicine (U.S. Food & Drug Administration, 2020). Digital health technologies use computing platforms, connectivity, software, and sensors for health care and related uses. These technologies span a wide range of uses, from applications in general wellness to applications as a medical device. They include technologies intended for use as a medical product, in a medical product, as companion diagnostics, or as an adjunct to other medical products (devices, drugs, and

biologics). They may also be used to develop or study medical products (U.S. Food & Drug Administration, 2020).

eHealth (electronic health). The term ehealth is defined as "a set of technologies applied with the help of the internet, in which healthcare services are provided to improve quality of life and facilitate healthcare delivery" (da Fonseca et al., 2021). eHealth mostly focuses on medical informatics and deals with data. An electronic medical record (EMR) system is an eHealth system that records patients' medical data. A hospital information system is also an eHealth system that collects, processes, and stores any data related to a hospital.

mHealth (mobile health). According to the WHO Global Observatory for eHealth (2011), mHealth is a component of eHealth. The Global Observatory for eHealth defines mHealth as medical and public health practice supported by mobile applications, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices (Martinez-Pérez et al., 2013). Health and fitness apps are generally intended for daily individual use and are related to monitoring or informing about a variety of healthy activities such as calorie counting or exercise (Aungst et al., 2014; Martinez-Pérez et al., 2013). Medical apps focus more on healthcare practices and may assist in communication or visual representation of a medical condition or may help to record blood

pressure or blood sugars in clients with hypertension or diabetes.

- ◦ However, the use of m-Health technology may have potential security issues. Many health apps currently available require the client to input personal health information (Cummings et al., 2013). The developer informs the user of the terms of use (including the use of personal health information) by requiring a confirmation agreement before the app can be used. If the client agrees to the terms of use, users must be informed of who has access to any personal information placed within the app. Clients also need to be informed if their healthcare provider will monitor this information or if someone else outside the circle of care will have access to this health information, such as the app developer. All healthcare providers must follow the Health Insurance Portability and Accountability Act (HIPAA) when using apps with multiple clients so that any personal information is de-identified. Suppose more than one client is accessing a mobile device during a hospital stay or health consult. In that case, it is also important to develop privacy policies to prevent clients from accessing another client's health information entered into the app.

(Note: Whereas **eHealth** refers primarily to systems that create infrastructure, **mHealth** refers to the mobile applications that provide data to providers and patients.)

Health information technology (HIT). The processing, storage, and exchange of health information in an electronic environment. Widespread use of health IT within the health care industry will improve the quality of health care, prevent medical errors, reduce health care costs, increase administrative efficiencies, decrease paperwork, and expand access to affordable health care. It is imperative that the privacy and security of electronic health information be ensured as this information is maintained and transmitted electronically (U.S. Department of Health and Human Services, 2022a). HIT includes electronic health records (EHRs), personal health records (PHRs), electronic prescribing (e-prescribing), as well as privacy and security systems (Office of the National Coordinator for Health Information Technology, n.d.). Review fact sheet (Office of the National Coordinator for Health Information Technology, n.d.): [Health Information Technology Fact Sheet](#)

6.1.2 General Categories of Health Information Technology

Applications

Five (5) categories of health information technology *applications* include electronic health records, telemedicine/telehealth services, health information networks, decision support tools, and internet-based technologies and services.

I. Electronic Health Records

The **electronic health record (EHR)** allows access in real-time to patient information to authorized providers since it contains each patient's medical history, diagnoses, medications, immunizations, and allergies. The certified EHR is a digital system that provides the most up-to-date documented information on the patient's medical status. EHRs, when integrated with clinical decision support tools, help the provider to interpret the patient data currently available and support the interpretation of that data by the provider. This system can provide clinical reminders or alerts, aggregate the data into a central database for analysis, and provide a means of communication and collaboration with other providers (and with patients) through the patient portal. The EHR is interactive and can support complete documentation of a patient encounter through the use of the Computerized Provider Order Entry (CPOE) templates embedded in the EHR. Access and accuracy of information in the EHR depend upon provider inputs, messaging standards,

and terminology standards. The use of patient portals has improved communication between healthcare providers through the use of encrypted emails as well as access to the patient's medical record, also known as health information exchange.

Standardization overview

Electronic health systems use standardized clinical terminologies so that all healthcare providers can communicate findings and share client information within their specific practice settings. Standardized clinical terminologies refer to a set of common terms that describe health conditions, treatment plans, and necessary interventions. Two examples of commonly used standardized clinical terminologies include the **Systematized Nomenclature of Medicine—Clinical Terms (SNOMED CT)** and **Canadian Health Outcomes for Better Information and Care (C-HOBIC)**. Standardized clinical terminologies facilitate the measuring and recording of medical care and data, such as monitoring the time it takes to perform a procedure. This recorded data can also describe specific medical activities and their impact on client outcomes, including the client's progression toward discharge.

Benefits

The accuracy of data used in patient care and treatment is

critical as a foundation for better clinical outcomes, accuracy in billing, and timely reimbursements of healthcare services. The EHR design is to provide complete and accurate medical documentation on each patient. This data accessed at the point of care, without the difficulties of reading an illegible paper record, is critical for efficient and effective clinical decision-making. By sharing patient information outside of the healthcare organization or physician practice with other authorized healthcare providers, organizations can reduce the costs of duplicate testing, saving time and money for patients and providers. The coordination of care includes many stakeholders (e.g., care teams, the patient) in the management of the patient's health. Streamlining administrative and business processes helps improve the value of these systems as well as increase patient safety and satisfaction.

Challenges

There are many challenges when adopting an EHR and CPOE. Some unintentional consequences when adopting these systems can be disrupted workflows that increase the clerical burden on the provider by including clerical documentation responsibilities in addition to the clinical documentation. The frequent changes to systems and user interfaces increase the disruption of work and the learning curve included with each change. Some issues remain with using paper documentation since complex patient orders like Total Parenteral Nutrition (TPN) and Chemotherapy

continue on paper orders because of the complexity and uniqueness of each order based on a specific patient's needs. Although EHR and CPOE technologies change how medications are ordered, they can introduce new medication errors that result from confusing or overly complex graphical user interfaces where CPOE restricts medication orders and protocols that do not allow the clinician to order the appropriate medication because it is not an available selection (Hartzog, 2010).

If the CPOE templates only offer the provider a check-off box, a revision of the templates is indicated to provide more opportunities for specific documentation details. Providers and coders collaborate with the CPOE implementation team to ensure that the templates reflect best practices and billing requirements. Organizations must be aware that correcting one error, such as illegible handwriting, can also lead to alert fatigue. Automating some processes like medication interactions is very valuable as long as the pop-up alerts do not cause alert fatigue. The pop-up alert must be targeted and provide valuable information to the healthcare provider.

If the alerts are frivolous and the provider is overwhelmed by the number of interruptions, they can make errors by overriding all alerts. For example, aspirin causes an alert with almost every drug, and is a common prophylactic medication for stroke and heart attack. Alerts can be modified through the Pharmacy and Therapeutics Committee, where pharmacists,

clinicians, and physicians work together to ensure their relevance in the practice setting. The configuration of CPOE templates can present a barrier to billing since accurate documentation is critical. Template configuration must allow the level of detail required to satisfy code requirements for reimbursement of health services provided in patient care (Centers for Medicare & Medicaid Services, 2021a).

Health information exchange

The Health Information Exchange (HIE) supports the sharing of electronic health data between two or more healthcare organizations or providers. The HIE can also be an organization that provides this technology at a local, state, regional, or national level, providing a secure ability to share health data. The STAR (Strengthening the Technical Advancement & Readiness of Public Health via Health Information Exchange) Program expands the ability of HIEs to support public health agencies in response to health emergencies and pandemics such as COVID-19 (HealthIT, 2021a). The HIE is a hub of data pulled from multiple sources, including local communities, regional and state entities that depends on policies to define how data can be used in public health agencies.

One of the challenges of the HIE is the need for a master patient index that provides unique identification so that the patient information is unique to that patient and not merged with a patient who has the same name. The capability of

keeping correct patient information is used at an organizational level with medical record numbers associated with unique patients. The danger of incorrect treatments based on incorrect patient information can happen when sharing patient information outside the organization. This danger is one reason that patient engagement in their care and review of the documentation in their medical record is so important.

II. Telemedicine and Telehealth Services

Descriptions

During the COVID-19 pandemic, telemedicine and telehealth were widely adopted to provide healthcare to patients and keep them safe. **Telemedicine** uses telecommunication technologies such as a computer, tablet, or smartphone over the Internet to let a patient talk to their doctor live either by phone or video chat (Health Resources and Services Administration [HRSA], 2022). Telemedicine uses electronic communications and software to provide clinical services without the need for an in-person visit to the doctor's office. Telemedicine supports remote monitoring so a patient's doctor can review any changes they are experiencing from home (HRSA, 2022). **Telehealth** provides non-clinical services such as provider training and medical education. It

also supports the ability to send and receive secure messages and exchange files with a healthcare provider (HRSA, 2022).

Although telemedicine/telehealth may seem to be an entirely new technology, it really is not. NASA pioneered telemetry and telemedical technologies in the space program to monitor the life signs of the astronauts. These emerging communication technologies provide an opportunity for virtual healthcare visits and remote monitoring to support rural populations that are often medically underserved or the need for isolation. For example, the only way that many patients were provided a continuity of care when in-person visits were restricted during the COVID-19 pandemic was through the virtual visit using telehealth platforms (Bird, 2021).

Providing safe and efficient care to patients has always been the goal of healthcare. Pre-COVID-19, the use of telehealth was restricted due to policies governing the specific telehealth services that would be covered and reimbursed. Currently, revisions to state laws and federal regulations are being considered since existing licensing and reimbursement barriers may limit the use of telehealth technologies (Lewis, 2021; Maheu, 2021). During the pandemic, there was a temporary change that removed these restrictions. However, further research is needed to explore the sustainability of telehealth as a treatment option for a wide range of patient groups and its utility as a communication tool (Doraiswamy et al., 2021;

Graham et al., 2021; Lieneck et al., 2021; Nicosia et al., 2021; Purnell & Zheng, 2021).

Modalities

Telemedicine/telehealth can take the form of audio and video (synchronous), store-and-forward technologies (asynchronous), and remote patient monitoring (Rangachari et al., 2021).

1. Synchronous

This modality includes real-time telephone or live audio-video interaction, typically with a patient using a smartphone, tablet, or computer. In some cases, a nurse may use peripheral medical equipment (e.g., digital stethoscopes, otoscopes, ultrasounds) physically with the patient, while the consulting medical provider conducts a remote evaluation.

2. Asynchronous

This modality includes "store and forward" technology, where messages, images, or data are collected at one point in time and interpreted or responded to later. Patient portals can facilitate this type of communication between provider and patient through secure messaging.

3. Remote patient monitoring

This modality allows direct transmission of a patient's clinical measurements to their healthcare provider from a distance (which may or may not be in real-time). It also allows the older adult to age in place with less travel and exposure to COVID-19 and other infectious diseases. Examples of telehealth services include TeleSleep, TeleSurgery, outpatient patient-provider video conferencing, mental health support services, virtual physical exam guidelines, and maternity support (Benziger et al., 2021; Lieneck et al., 2021; Nicosia et al., 2021; Purnell & Zheng, 2021; Westwood, 2021; Zimmerman et al., 2021).

To examine the effectiveness of this modality, Zimmerman et al. (2021) conducted a patient satisfaction survey comparing partial hospital services delivered to 240 patients via telehealth during the COVID-19 pandemic, to in-person treatment provided to 240 patients prior to the pandemic. The results of the patient satisfaction survey revealed that "**both groups were highly satisfied** with all components of the treatment program and almost all would recommend treatment to a friend or family member" (Zimmerman et al., 2021).

Examples of remote monitoring tools include continuous glucose monitors, anticoagulation testing,

electrocardiography devices, heart rate monitors, medical alert systems, maternity care monitoring, pediatric monitoring, pulse oximeter, smart scale, medication monitoring, and patient wearables (Welkin Health, 2020). Devices such as smartphones and computers allow easy access to remote healthcare providers through virtual visits from the comfort of their home. In addition, many new technologies, such as blood pressure cuffs, glucose meters, and pulse oximeters, can upload data for the provider.

III. Health Information Networks

Health Information Networks (HIN) are standards, policies, and services. The objectives of HIN are to secure health information exchange over the Internet. HIN are, therefore, important for medical data, which are sensitive data that need to be protected for reasons such as data integrity prevention. Examples of HIN include:

- National: The Nationwide Health Information Network (NHIN)
- Public: The Public Health Information Network
- State: Michigan Health Information Network

IV. Decision Support Tools

Machine learning and all subsets of artificial intelligence (AI) are now being used with eHealth applications to support decision-making. Decision support tools mostly use patient data for data analytics and can even assist in predicting a medical event.

Definition: *Machine learning* is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy (IBM, n.d.).

Definition: *Artificial intelligence* is defined as "a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments" (National Artificial Intelligence Initiative Office, 2023).

Electronic clinical decision support (CDS) tools are

integrated into some electronic health records (EHR) and other similar systems. Some CDS tools can provide prompts and reminders to assist users, including healthcare professionals, clinical teams, patients, and administrators, in implementing evidence-based clinical guideline recommendations during patient care or service delivery. CDS tools can provide accurate and timely information to help advise clinical decision-making within the patient encounter. The data from the EHR can be used, for example, to analyze organizational practices and progress (Centers for Disease Control and Prevention, 2022a).

V. Internet-Based Technologies and Services

The Internet is the data highway that enables data and information exchange and communication between the different actors within a health system. **The Internet of Things (IoT)** is defined as user or industrial devices that are connected to the internet including sensors, controllers, and household appliances (National Institute of Standards and Technology [NIST], n.d.). According to the NIST (n.d.), the IoT could revolutionize the American economy by enabling a fully connected world with on-demand access to data, systems, and each other. Of course there are risks that come along with this level of connectivity, especially among so many devices across the globe. We must be able to trust the privacy, security,

authenticity, and reliability of these devices, and the advanced networks that support them (NIST, n.d.).

Review video :

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NIST. (2018). What is the Internet of Things (IoT) and how do we secure it? https://youtu.be/H_X6IP1-NDc

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Click here to move on to 6.2 Health

[Information Legislation.](#)

6.2 HEALTH INFORMATION LEGISLATION

Sections:

Healthcare legislation is created to improve access to care and depends on the use of the information technologies that we have available at the point of care. Our electronic health records (EHRs) are connected to the Internet. From that perspective, we must be concerned with **protected health information (PHI)** so that it is secure when used or shared with other healthcare providers. Two important pieces of legislation enacted to protect PHI include the Health

Insurance Portability and Accountability Act (HIPAA) of 1996 and the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009. "It is important to be aware that the HITECH Act and HIPAA are separate and independent laws. However, because some provisions of HITECH strengthened existing HIPAA standards and mandated breach notifications, HITECH is often (incorrectly) regarded as part of HIPAA" (HIPAA Journal, 2023).

Definition: *Protected health information (PHI)* is defined as individually identifiable health information that is transmitted or maintained in any form or medium (electronic, oral, or paper) by a covered entity or its business associates, excluding certain educational and employment records (National Institutes of Health, 2007b)

6.2.1 HIPAA

The **Health Insurance Portability and Accountability Act of 1996 (HIPAA)** is a federal law requiring the creation of national standards to protect sensitive patient health

information from being disclosed without the patient's consent or knowledge (Centers for Disease Control and Prevention, 2022b). HIPAA privacy and security rules grew out of two statutes in the 1970s that addressed the concerns for confidential patient information: first the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970 and then the Drug Abuse Prevention, Treatment, and Rehabilitation Act of 1972 (Health & Human Services, 1994). Protecting the identities of people seeking treatment for addiction was a catalyst for our "current need to know" policies that define many of our information security strategies. HIPAA was signed into law in 1996 to protect the health insurance coverage of people when they change or lose their employment. In addition, HIPAA created standards for electronic healthcare transactions and national identifiers for healthcare providers, insurers, and employers (HealthIT, 2021b).

I. HIPAA Privacy and Security Standards

HIPAA Privacy Rule: Establishes national standards to protect individuals' medical records and other personal health information. It applies to health plans, healthcare clearinghouses, and healthcare providers that conduct certain healthcare transactions electronically. The rule applies safeguards to protect the privacy of personal health information and sets limits and conditions on the uses and

disclosures of such information without patient authorization. The rule also gives patients rights over their own health information, including the right to examine and obtain a copy of their records and request corrections (Health Information Management Systems Society, 2021).

HIPAA Security Rule: Sets national standards for protecting the confidentiality, integrity, and availability of electronically protected health information. Compliance with the Security Rule was required as of April 20, 2005. The rule addresses the technical and non-technical safeguards that "covered entities" must have to secure an individual's electronic health information. Before HIPAA, there were no generally accepted requirements or security standards for protecting health information (Health Information Management Systems Society, 2021).

II. Covered Entities

Definition: ***Covered entities*** are defined in the HIPAA rules as (1) health plans that provide or pay the cost of medical care, (2) health care clearinghouses such as a billing system or health management information system, and (3) health care providers (National Institutes of Health, 2007a). In general, a covered entity is any entity that provides, bills, or receives payments for healthcare services as part of its normal

business activities.

Protecting electronic patient information requires a definition of who is required to follow HIPAA privacy and security requirements. Under HIPAA, only a **covered entity** is required to be HIPAA-compliant and responsible for data breaches. For example, if a clearinghouse processes or facilitates the processing of health information from nonstandard or standard formats into standard or nonstandard formats, this qualifies them as a covered entity. Private group healthcare benefit plans and insurers that provide or pay for the cost of medical care qualify these groups as a covered entity. An exception is if the benefit plan has less than 50 participants and is self-administered, it is not a covered entity. Supplemental Medicare policies and health maintenance organizations (HMOs) are covered entities. Considering these definitions, health insurance companies, HMOs, employer-sponsored health plans, Medicare, Medicaid, military, and veteran's health programs are covered entities. Health Data Clearinghouses, doctors, clinics, psychologists, dentists, chiropractors, nursing homes, and pharmacies are covered entities. Suppose a covered entity uses the services of a third party, such as a Cloud Service Provider. In that case, they must have a written business associates agreement (BAA) contract

that establishes what this third party has been engaged to do, and the BAA must require compliance with HIPAA regulations. Some other examples are a third party that helps with health plan claims processing, utilization review consultants, and independent medical transcriptionist services for physicians (CMS, 2021b).

III. Safeguards

Before HIPAA became law in 1996, there was no accepted standard for protecting health information. CMS outlined the policies and procedures needed to protect patient information. Security is one of the primary concerns organizations have in protecting patient health information (PHI), and sharing it with other organizations in health information exchanges. Three security safeguards are used to secure an organization's protected health data: administrative, physical, and technical.

- **Administrative safeguards** demonstrate appropriate written policies, procedures, and job descriptions, including sanctions for violations, so staff are aware and can be properly trained.
- **Physical safeguards** define user access, training, disaster planning, backup, facility inventory, safeguards for unauthorized physical access or tampering, and contingency plans.
- **Technical safeguards** include unique user-identified

password policies, user access allowed, automatic log-off, email policies, encryption, and data transmission protocols.

Considering organizational requirements, they must include the use of Business Associates Agreements (BAAs) that identify and control the amount of access a vendor could have to protected health information (CMS, 2016). However, with the increased adoption of EHRs to gather patient health information, there is also an increased vulnerability to data breaches. HIPAA administrative, technical, and physical safeguards must be implemented to keep protected health information (PHI) confidential, private, and secure (HealthIT, 2017).

IV. Threats

Inside the healthcare organization, security training for all staff accessing the information system is critical to protecting health information. The threats to information security can be intentional or unintentional. The threat source is either internal or external to the organization. Intentional exposure of patient information without authorization can result from a hacker or a disgruntled employee using malicious software – malware. Intentional destruction of data or network disruption can result from various forms of malware, including viruses, Trojan Horses, spyware, worms,

Ransomware, and rootkits. Organizations must provide, at a minimum, annual security training so that the health information systems that staff are using are less likely to be compromised (Conn, 2016). In addition, the appropriate password complexity and security must be enforced for each user of the system. The security precautions to prevent an internal breach include not sharing passwords and not downloading information or unauthorized software from insecure or forbidden sites.

The U.S. Department of Health and Human Services (2019) provides security resources for healthcare organizations and providers. The first step is to create an organizational culture committed to HIPAA privacy and security requirements. Next, it is important to perform a security risk analysis by reviewing policies, procedures, and staff activities related to the HIPAA Security Rule, then document the risk analysis processes. Developing an action plan that helps manage and mitigate the risks identified in the analysis is also important.

6.2.2 HITECH Act

The **Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH)**, which was part of the American Recovery and Reinvestment Act of 2009 (ARRA), provided the Department of Health and Human Services (HHS) the authority to create programs that would

improve quality, safety, and efficiency in the exchange of health information (U.S. Department of Health and Human Services, 2017). HITECH expanded the adoption of health information technology, such as EHRs, by providing funding through incentive payments authorized by Medicare and Medicaid. This funding was provided to hospitals and clinicians who could demonstrate the "meaningful use" of EHRs by integrating clinical quality measures in patient care (U.S. Department of Health and Human Services, 2017).

Definition: *Meaningful use* is defined as "the use of certified electronic health record by healthcare providers to improve the safety, efficiency, and quality of care. It includes the:

- Use of certified EHR technology in a meaningful manner (e.g., e-prescribing).
- Use of certified EHR technology in a manner that provides for electronic exchange of health information to improve the quality of care.
- Use of certified EHR technology to submit clinical quality measures (CQM) and other measures." (Henricks, 2011)

HITECH not only encouraged the adoption of Certified EHRs but also removed loopholes in HIPAA by making the language describing HIPAA Rules more robust (HealthIT, 2015; HIPAA Journal, 2023). For example:

> Prior to the HITECH Act of 2009, there was no enforcement of a written business associates agreement (BAA), and covered entities could avoid sanctions in the event of a breach of PHI by a Business Associate by claiming they did not know the Business Associate was not HIPAA-compliant. Since Business Associates could not be fined directly for HIPAA violations, many failed to meet the standards demanded by HIPAA and were placing millions of health records at risk. (HIPAA Journal, 2023)

From 2011 through 2016, the EHR incentives were available to eligible care providers who met the criteria defined by Medicare and Medicaid (Burke, 2010). The Medicare incentives were available to hospitals that received payments under the Inpatient Prospective Payment System (IPPS), critical access hospitals, and Medicare advantage. The eligible professionals were medical or osteopathy doctors, dental surgeons, podiatrists, doctors of optometry, and chiropractors. Medicaid incentives were available to acute care, critical access, children's, and cancer hospitals in which Medicaid patients comprised at least 10% of their patient volume. Eligible professionals are physicians, nurse practitioners, certified nurse-midwives, dentists, and physician assistants working in a

federally qualified health center or rural health clinic (Centers for Medicare & Medicaid Services [CMS], 2010).

To be eligible for the incentive payments, the participants must demonstrate the meaningful use of the certified EHR to improve the quality of healthcare by achieving clinical quality measures to meet meaningful use objectives. The *Meaningful Use Incentive Program* included privacy and security requirements that PHI would be protected from unauthorized access and that the patients would have access to their medical information (HealthIT, 2015).

Definition: *Interoperability* is defined as the ability of two or more systems to exchange health information and use the information once it is received (HealthIT, 2013).

According to the HIPAA Journal (2023):

> In April 2018, CMS renamed the Meaningful Use incentive program the **Promoting Interoperability Program**. The change moved the program's focus beyond the requirements of Meaningful Use to the interoperability of EHRs to improve data collection and submission, and patient access to health information.

EHR Interoperability enables better workflows and reduced ambiguity and allows data transfer among EHR systems and

health care stakeholders. Ultimately, an interoperable environment improves healthcare delivery by making the right data available at the right time to the right people.

Review fact sheet (CMS, 2021c): Medicare Promoting Interoperability 2021

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Click here to move on to 6.3 Developing Technology in Healthcare.

6.3 DEVELOPING TECHNOLOGY IN HEALTHCARE

Sections:

6.3.1 Emerging Healthcare Technologies

Implementation of smart healthcare solutions can improve the quality of patient care to enhance patient treatments. These kinds of solutions enable healthcare professionals to deliver the needed and adjusted medical treatment smarter and faster (Alotaibi & Federico, 2017). With the increasing world

population, the well-known conventional patient-doctor relationship has lost effectiveness (Choy & Ismail, 2017). Hence, smart healthcare has become very important and can be implemented at all levels in an organization, starting from temperature monitoring for babies to tracking vital signs in the elderly. With healthcare technologies, organizations can create efficient workflows to ensure high-quality patient treatment. This ambition is only achieved when technologies are fully utilized. Therefore, the focus should be on ensuring the efficient use of existing and new technologies (Cozzens et al., 2010; Simpson et al., 2008). Research in new technology is developing rapidly in the health field. Six topics regarding emerging health information technology include telemedicine, robotic surgery, game technology, the home under observation, wearables, and usability (Boulos & Wheeler, 2007).

I. Telemedicine

This topic was discussed in Section 6.1.2 of this chapter. Please review **6.1.2 Categories of Health Information Technology Applications.**

II. Robotic Surgery

Robots are machines or automated technologies capable of performing a series of actions to do

everything from driving cars to performing surgery. Robots have existed in the workplace for years, but their presence on job sites is increasing, as are their capabilities. Today's robots are designed to work alongside, move amongst, and be worn by human workers.

Robotic surgery is a method of performing surgery using very small tools attached to a robotic arm. The surgeon controls the robotic arm with a computer. Nowadays, robots are used for surgeries such as gastric bypass, uterus, kidney, bladder, prostate, and colon. The advantage is that robotic surgery can be performed without an incision, and the patient can leave the hospital earlier than with open surgery (UC Health, 2019). At the same time, the robot can see the body in 3-D; it is more flexible and has more precision. The result is less blood loss, fewer infections, less scarring, shorter hospitalization, and less pain (Van Koughnett et al., 2009).

III. Game Technology

According to Lioce et al. (2020), "**Game technology** is the application of game design elements (conceptual building blocks integral to building successful games) to traditionally nongame contexts (Rutledge et al., 2018). It is the application of the characteristics and benefits of games to real-world

processes or problems. Gamification differs from serious games in terms of the design intention, with gamification interventions involving the application of game elements with a utilitarian purpose" (Gentry et al., 2019).

Game technology became popular through a concept known as **exergaming**. Exergaming is defined as "digital games that require bodily movements to play, stimulating an active gaming experience to function as a form of physical activity." These games require the user to apply full body motion to participate in virtual sports, in group fitness exercise or other interactive physical activities. Exergaming became popular among young people and then spread quickly to nursing homes where the elderly also had the pleasure and benefit of the machine because it was both entertaining and a form of exercise (Hwang et al., 2011, Lawrence et al., 2010).

Review fact sheet (American College of Sports Medicine, 2013): Exergaming

Phillips et al. (2019) concluded the following regarding the use of game technology in healthcare:

- "Gamification can motivate patient-controlled behaviors and has already been studied in a wide variety of disease states."
- "Although gamification in healthcare has the potential to modify behaviors, participating in gaming is innately a behavior that may result in unintended consequences. Given concerns both real and imagined, it does not seem unreasonable for

gamified health apps to undergo an assessment of efficacy and safety before being released to the public."

- "Noncompliance with and nonadherence to prescribed medical treatments are problems that seem well suited to alternative motivational strategies. Conceptually, a variety of disease states could be avoided, or their progression substantially halted by more rational patient behavior, which might be positively influenced through a game application. Clinical examples include diet and exercise in patients with cardiac disease, smoking cessation in patients with chronic obstructive pulmonary disease, and lifestyle modification in patients with type 2 diabetes. Given that these chronic diseases have significant management costs, it would seem appropriate that physicians monitor the gamified apps in such clinical scenarios."

Today, games are also used for rehabilitation after cerebral hemorrhage and for the care of dementia patients. For example, patients can get cognitive training and become calmer through reversal play with old family pictures (Dormann, 2016; McCallum & Boletsis, 2013).

IV. The Home Under Observation

Imagine a home where it is being registered online every time you open the refrigerator door. The floor is pressure sensitive and can follow your walk around

the house. In the potted plants, there are small sensors that measure every time you water the plant, and when you turn on the light, it is logged (Cordelois, 2010).

For some, it sounds like a dystopic surveillance society. But for others, there are great opportunities to prevent hospital admissions among the elderly. The technology has huge potential. For example, pneumonia and urinary tract infections in the elderly can be traced in their everyday rhythms. If one can measure as soon as a breach of the patient ordinary routine occurs, treatment can put in much faster (Jerant et al., 2001).

V. Wearable Computers and Wearable Technology

Wearable computers and wearable technology are small devices using computers and other advanced technology designed to be worn in clothing or directly against the body. These devices are usually used for entertainment and other tasks like monitoring physical activity. Wearable technology typically uses low-powered radiofrequency transmitters to send and receive data from smartphones or the Internet. Radiofrequency transmitters emit radiowaves, a type of non-ionizing radiation. Most devices use low-powered Bluetooth technology similar to that used in *hands-free* headsets for cell phones and many other wireless consumer devices. Some

devices also use Wi-Fi or other communication technologies (Centers for Disease Control and Prevention, 2015).

Familiar examples of wearable computers or wearable technology include "smartwatches" and fitness trackers. Future devices could include head-mounted displays and a wide variety of personal health monitors. Wearables collect all sorts of data about your body: sleep rhythm, pulse, location, and, among other things, how much you exercise (Asimakopoulos et al., 2017). These devices will be even more comprehensive in the future by reading insulin levels, anticipating ovulation, or monitoring how much sun you get.

VI. Usability in Health Technology

Health technology must be adapted to the users. Two basic elements of health technology must be present: first, the technology must work, and second, patients must have access to the technology. It is not the technology itself that is interesting, but the purpose of the technology. The technology must be applicable to many patient groups, disease groups, and populations where it can contribute value to health, safety, cohesion, learning, and quality of life (Bernhardt, 2004). The patient, or the user, is thus the focal point.

Definition: *Usability* is the extent to which a

product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use (National Institute of Standards and Technology, 2017).

One of the pieces in this great puzzle of health technology is usability. It must be easy, safe, useful, and motivating for users to use the technology. The technology user interface must be intuitive and tailored to the specific user group. When needed, the right effort must be organized to equip users to apply the technology properly. "Human factors" are an important part of health technology (Turner et al., 2017). According to the American Psychological Association (2023):

> The term human factors decribes the impact of human beings, with their characteristic needs, abilities, and physical and mental limitations, on system function. Considerations for human factors need to be made when designing, evaluating, or optimizing systems for human use, especially with regard to safety, efficiency, and comfort.

Human factors are becoming increasingly important as more and more patients with psychiatric disorders are being treated through technology (Patel & Kannampallil, 2014).

6.3.2 The Future of Health Information Technology

The future includes new technologies such as blockchain, artificial intelligence, robotic process automation, the Internet of Medical Things, and concerns regarding cybersecurity and data privacy.

I. Blockchain

The COVID-19 pandemic demonstrated the need for healthcare providers to adopt EHRs and other digital technologies like telehealth and health information exchanges to expand access to care for all patients. The need to adopt EHR technologies will increase the focus on standardization. In the future, improvements in securing patient information may use new technologies like blockchain (Ahmad et al., 2021).

Blockchain is a digital ledger of transactions and is likely an important component of the next-generation Internet – the Decentralized Web or Web 3 (Walkweltech, 2019). Simply put, blockchain is a database technology (or digital ledger) that enables the secure storing and sharing of information. Blockchain is not a new technology but instead an innovative way of using existing, mature technologies. Currently, its core function is to create a tamper-resistant ledger for digital assets,

such as cryptocurrency (U.S. Government Accountability Office, 2022).

Since the Health Insurance Portability and Accountability Act (HIPAA) os 1996 requires an audit trail to be visible regarding **protected health information (PHI)**, blockchain in its current form is not HIPAA compliant. However, it could be developed to accommodate that requirement. Large amounts of complex medical data are being collected in EHRs (e.g., lab values from tests, diagnostic imaging, sensor devices, and genomics). This large amount of complex data requires a strategy to analyze it so that it is useful and creates actionable information. Data can be structured, semi-structured, or unstructured.

The characteristics of big data are "value, volume, velocity, variety, veracity, and variability" (Ristevski & Chen, 2018, p. 2). The value of the data is when it is analyzed that it provides value to the patients and clinicians who will use it.The sheer volume of medical and health-related data is increasing exponentially, and the velocity refers to the speed and amount of data created. The variety of the data depends on if the data is structured, unstructured, or semi-structured. The veracity of the data means what relevance, reliability, quality, and predictive value the data may provide. Finally, data variability considers if the data is consistent over time.

Big data analytics can potentially improve patient care by detecting diseases and trends more quickly by revealing disease

patterns and providing actionable knowledge to healthcare providers and public health. However, missing data points can change the analysis and lead to erroneous conclusions. There are also privacy and security issues with using big data in healthcare since medical data is sensitive and must be kept confidential. **Encryption and data de-identification** are needed so that personal information is not accidentally revealed.

II. Artificial Intelligence

In healthcare, there are opportunities to apply *artificial intelligence (AI)* and *machine learning (ML)* to the large amounts of patient data generated every day (Fernandez, 2018). The application of AI to digital imaging is a critical opportunity for streamlining the diagnosis of disease and can help identify disease trends in different geographic locations. ML is a type of AI where the algorithms developed are based on computational statistics. This

Key Term

Encryption. A method of converting an original message of regular text into encoded text. The text is encrypted using an algorithm (a type of formula). If information is

encrypted, there is a low probability that anyone other than the receiving party with the key to the code or access could decrypt (translate) the text and convert it into plain, comprehensible text (HealthIT, 2015).

data can "teach" the computer by recognizing patterns in the data; the larger the dataset provided, the more precise the output will become. COVID-19 demonstrated the value of predictive analytics that helped medical providers respond to the spread of the disease to support population health and improve patient outcomes. Although AI and ML are powerful tools, they are only as good as their programming. If incomplete datasets are used to train AI and ML, bias can be introduced by including existing prejudices around race or gender, for example. Addressing this ethical concern means that these programs must be free of errors. Human oversight is needed since AI and ML systems are not infallible (Juneja, 2022).

III. Robotic Process Automation

Definition: *Robotic process automation (RPA)*, also known as software robotics, uses automation technologies to mimic back-office tasks of human workers, such as extracting data, filling in forms, moving files, et cetera (International Business Machines Corporation [IBM], 2020).

Robotic Process Automation (RPA) is a technology that extracts data, fills in forms, and moves files. This software helps to automate repetitive tasks and can expand the use of AI and ML, natural language processing, and computer vision (IBM, 2020). The difference between AI and RPA is that AI is data-driven, and RPA is process-driven. The RPA processes are defined by end-users.

IV. The Internet of Medical Things

Definition: *The Internet of Medical Things (IoMT)* refers to the use of mobile computing,

medical sensors, and cloud computing to monitor patients' vital signs in real-time and the use of communication technologies to relay data to a Cloud computing framework (Schneider & Xhafa, 2022).

Definition: *Cloud computing* is a layered architecture composed of the hardware, storage infrastructure, platform composed of the software framework, and web service applications (Botta et al., 2016).

The Internet of Medical Things (IoMT) connects many widely distributed devices. The opportunity to leverage wearable devices to help patients and their care providers manage chronic disease through remote patient monitoring cannot be overlooked. The interoperability and connectivity of healthcare devices depends on how the device communicates its data, such as a one-way data transmission to the provider. Integrating data from different devices provides a better understanding of the patient and their current conditions.

Patient engagement and understanding about using medical devices will provide the benefit of better patient outcomes through early detection and interventions by their provider. Botta et al. (2016) suggest that the Cloud and IoMT must integrate radio frequency identified (RFID) technology, wireless sensor networks, and smart devices capable of sending digital information. The IoMT is used to support eHealth, where data is stored in the cloud and shared (Kelly et al., 2020). The security, privacy, and confidentiality factors of these new technologies, like the IoMT, Cloud computing, and remote monitoring, will be a challenge in meeting HIPAA requirements since these technologies are currently vulnerable to cyberattacks.

However in 2022, health care providers and health plans (i.e., covered entities) were granted use of remote communication technologies to provide **audio-only** telehealth services when such communications are conducted in a manner that is consistent with the applicable requirements of the HIPAA Privacy Rules (U.S. Department of Health and Human Service, 2022b). Covered health care providers that seek additional privacy protections for telehealth while using **video** communication products need to provide these services through technology vendors that are HIPAA compliant (U.S. Department of Health and Human Services, 2021). Fortunately, most telehealth video conferencing platforms are HIPAA compliant. Encryption is an important step needed to

protect private data during video conference calls and IoMT devices (Softermii, 2022).

V. Cybersecurity and Data Privacy

> **Definition: *Cybersecurity*** is defined as the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information.

Cybersecurity and data privacy are ongoing concerns as the adoption and use of these innovative technologies increase. According to the Healthcare Information and Management Systems Society (2023):

> Cybersecurity in healthcare involves the protecting of electronic information and assets from unauthorized access, use and disclosure. There are three goals of cybersecurity: protecting the confidentiality, integrity, and availability of information, also known as the ***CIA triad***.

Review webpage (Healthcare Information and Management Systems Society, 2023): Cybersecurity in Healthcare

Review blog (Health and Human Services, 2022): Improving the Cybersecurity Posture of Healthcare in 2022

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Click here to move on to the Chapter Summary.

6.4 CHAPTER SUMMARY

High-income and low- and middle-income countries are working to support their healthcare systems with health information technology (HIT). eHealth, mHealth, telehealth, and telemedicine are modern HIT-enabled tools aiming to provide better, more efficient, and more effective care services to the patient. HIT systems collect and provide medical information and process collected data to assist decision-making. Five health information technology applications categories include electronic health records (EHR), telemedicine/telehealth services, health information networks, decision support tools, and internet-based technologies and services. The certified EHR is a digital system that provides patient medical information and, when integrated with clinical decision support tools, helps the provider interpret the patient data.

The Health Information Exchange (HIE) supports sharing of electronic health data between two or more healthcare organizations or providers at the state, public health, or federal level. Telemedicine uses electronic communications and software to provide clinical services without the need for an in-person visit. The telehealth that results from this form of communication can take the form of audio and video

(synchronous), store-and-forward technologies (asynchronous), and remote patient monitoring. Health Information Networks (HIN) are standards, policies, and services designed to secure health information exchange over the Internet. Decision support tools are used for data analytics and to predict a medical event. Internet-based technologies enable data and information exchange as well as communication between the different actors within a health system.

Health information legislation created to improve healthcare delivery and protect confidential patient information include the Health Information Technology for Economic and Clinical Health (HITECH) Act and the Health Insurance Portability and Accountability Act (HIPAA). Six emerging health information technologies include telemedicine, robotic surgery, game technology, the home under observation, wearables, and usability. Future health information technologies include blockchain, artificial intelligence, robotic process automation, and the Internet of Medical Things. The future of health information technology continues to embrace concerns regarding cybersecurity and data privacy.

Key terms included in this chapter are also listed in the Glossary at the end of the book.

Click here to view the references and attributions from Chapter 6.

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Glossary

Access. The timely use of personal health services to achieve the best possible health outcomes.

Accountable Care Organizations (ACOs). Groups of doctors, hospitals, and other healthcare providers who partner voluntarily to give coordinated, high-quality care to the Medicare patients they serve.

Accreditation. A review process that determines if an agency meets the defined standards of quality determined by the accrediting body.

Adult day care. A group program designed to meet the needs of functionally and/or cognitively impaired adults and provide respite for family caregivers.

Adverse selection. A problem in the health insurance industry caused by asymmetry *i*n information before insurance is purchased, such as when individuals/patients who know they are more likely to require care tend to choose more generous insurance plans.

Aides. Individuals that provide routine care and assistance to patients under the direct supervision of other health care professionals and/or perform routine maintenance and general assistance in health care facilities and laboratories.

Ambulatory Payment Classification (APC). A method of paying facilities prospectively for outpatient services.

Ambulatory surgical center. An outpatient facility that operates primarily to provide surgical services to patients who do not require overnight hospital care.

Artificial intelligence (AI). A machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments.

Assisted living. A living environment focused on maintaining independence in a supervised setting.

Blockchain. A database technology (or digital ledger) that enables the secure storing and sharing of information.

Brand-name drugs. Drugs that once were or still are under patents.

Bundled Payment Care Initiative (BPCI). A form of reimbursement that links various providers together for one single payment.

Capitation. A fixed sum of money paid to the provider per time unit (usually monthly) for each patient being treated by the provider.

Children's Health Insurance Program (CHIP). A cooperative federal/state public health insurance program that provides low-cost health coverage to children in families that earn too much money to qualify for Medicaid.

Clinical care. The prevention, treatment, and management of illness and preservation of mental and physical

well-being through services offered by medical and allied health professions, also known as healthcare.

Clinical privileges. Permissions to provide medical and other patient care services in the granting institution, within defined limits, based on the individual's education, professional license, experience, competence, ability, health, and judgment.

Cloud computing. A layered architecture composed of the hardware, storage infrastructure, platform composed of the software framework, and web service applications.

Coinsurance. A form of medical cost-sharing requires an insured person to pay a stated percentage of medical expenses after the deductible amount, if any, is paid.

Concurrent utilization review. A form of utilization review conducted while the medical services are ongoing.

Conventional indemnity plan. An indemnity that allows the participant the choice of any provider without effect on reimbursement. These plans reimburse the patient and/or provider as expenses are incurred.

Copayments. The fixed dollar amount that an insured person must pay when a service is received before the insurer pays any remaining charges.

Core measures. National standards of care and treatment processes for common conditions.

Coverage limits. Insurance payment limits set in terms of a dollar or per-day ceiling on benefits.

Covered entities. Any entity (health plans, health care

clearinghouses, or health care providers) that provides, bills, or receives payments for healthcare services as part of its normal business activities.

Current Procedural Terminology (CPT). A uniform coding system primarily used to describe tests, surgeries, evaluations, and any other medical procedure performed by a healthcare provider on a patient.

Custodial care. Non-medical care that can be safely provided by non-licensed caregivers. It can take place at home or in a nursing home and involves help with daily activities like bathing and dressing. In some cases where care is received at home, care can also include help with household duties such as cooking and laundry. It may be covered by Medicaid if care is provided in a nursing home setting and not at home.

Cybersecurity. The art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information.

Deductible. The deductible is a dollar amount that an insured person pays during the benefit period–usually a year–before the insurer starts to make payments for covered medical services.

Determinant. A factor that contributes to the generation of a trait.

Diagnostic-related group (DRG). A method of paying hospitals prospectively for inpatient services by relating the

type of patients a hospital treats to the resource demands and associated costs incurred by the hospital.

Digital healthcare. The delivery of patient and personalized medicine using digital channels to collect the patient's medical data, helping the patient to self-manage his health conditions using digital platforms or tools.

Disease management. A comprehensive, integrated approach to care and reimbursement based on a disease's natural course.

Dually eligible. People who are eligible for both Medicare and Medicaid.

eHealth. The use of information technology and/or systems and electronic devices for healthcare service delivery (electronic health).

Encryption. A method of converting an original message of regular text into encoded text.

Electronic clinical decision support (CDS). Tools integrated into some electronic health records (EHR) to provide accurate and timely information to help advise clinical decision-making within the patient encounter.

Electronic health record (EHR). A digital system that provides the most up-to-date documented information on the patient's medical status.

Emergency department. Hospital facilities that are staffed 24 hours a day, 7 days a week, and provide unscheduled outpatient services to patients whose condition requires immediate care.

Emergency Medical Treatment and Labor Act (EMTALA). Legislation that requires hospitals to treat patients in emergency situations whether or not they have insurance.

Epidemic. An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area.

Episode of illness. A specific medical condition or problem of expected limited duration.

Exclusive Provider Organization (EPO) plan. A more restrictive type of preferred provider organization plan under which employees must use providers from the specified network of physicians and hospitals to receive coverage.

Exergaming. Technology-driven physical activities, such as video game play, that requires participants to be physically active or exercise in order to play the game.

Facility-based long-term care services. Residential care facilities, assisted living facilities, nursing homes, and continuing care retirement communities.

Fee-for-service. A method of insurance payment in which doctors and other healthcare providers are paid for each service performed. Examples of services include tests and office visits.

Formulary drugs. Generic and brand-name drugs approved by the healthcare provider.

Game technology. The application of game design elements to traditionally nongame contexts.

Gatekeeping. The requirement to visit a general

practitioner, family practitioner, general internal medicine physician, or general pediatrician in an ambulatory setting and to obtain a referral prior to accessing specialist care.

Generic drugs. Drugs that are not under any patents.

Geriatrics. The branch of medicine dealing with the care of patients 65 and older.

Group health maintenance organization. A model in which the health maintenance organization contracts with a single, multispecialty entity for providers to provide care to its members.

Health. A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Health disparities. Preventable differences in the burden of disease, injury, violence, or in opportunities to achieve optimal health experienced by socially disadvantaged racial, ethnic, and other population groups and communities.

Health indicators. Summary measures that capture relevant information on different attributes and dimensions of health status and performance of a health system.

Health information exchange (HIE). The sharing of electronic health data between two or more healthcare organizations or providers.

Health information networks (HIN). Standards, policies, and services that secure health information exchange over the Internet.

Health information technology (HIT). The field of information and communication technology mainly focusing

on process automation and medical data processing to support healthcare service delivery, patient self-management, and any other related processes.

Health Information Technology for Economic and Clinical Health Act (HITECH). Part of the American Recovery and Reinvestment Act of 2009 that provided the Department of Health and Human Services the authority to create programs that would improve quality, safety, and efficiency in the exchange of health information.

Health Insurance Portability and Accountability Act (HIPAA). A federal law requiring the creation of national standards to protect sensitive patient health information from being disclosed without the patient's consent or knowledge.

Health maintenance organization (HMO). A healthcare system that assumes both the financial risks associated with providing comprehensive medical services (insurance and service risk) and the responsibility for healthcare delivery to HMO members in a particular geographic area, usually in return for a fixed, prepaid fee.

Health outcome. The result of a medical condition that directly affects the length or quality of a person's life.

Healthy People 2030. Launched in August 2020, this initiative is the fifth and most current iteration of the Healthy People initiative. It builds on knowledge gained over the last 4 decades and has an increased focus on health equity, social determinants of health, and health literacy with a new focus on well-being

High deductible health plan (HDHP). This type of plan typically features a higher deductible and lower insurance premiums than traditional health plans.

Hippocratic oath. A Greek medical text that requires a new physician to swear upon a number of healing gods that he will uphold a number of professional ethical standards.

Home and community-based services (HCBS). Person-centered care that allows people with significant physical and cognitive limitations to live in their home or a home-like setting and remain integrated with the community.

Home healthcare. A formal, regulated program of care delivered in the home that can include a range of services provided by skilled medical professionals.

Hospice care. Care focused on providing comfort and pain control versus extending one's life for patients expected to live six months or less.

Hospitals. Licensed institutions with at least six beds whose primary function is to provide diagnostic and therapeutic patient services for medical conditions; they have an organized physician staff, and they provide continuous nursing services under the supervision of registered nurses.

In-network providers. Healthcare providers (e.g., specialists, hospitals, laboratories) that have accepted contracted rates with the insurer. As a result, the insured person typically pays a lower price for using services within the network.

Indemnification. The payment for losses actually incurred.

Independent Practice Association (IPA). A health maintenance organization model in which a group of independent practitioners and group providers who decide to form a legal contract with a separate legal entity.

Infant mortality. The death of an infant before his or her first birthday.

Inpatient rehabilitation facility. A specialized hospital or unit focused on delivering intensive rehabilitative services to patients with medically complex diagnoses.

Internet of Medical Things (IoMT). The use of mobile computing, medical sensors, and cloud computing to monitor patients' vital signs in real-time and the use of communication technologies to relay data to a Cloud computing framework.

Internet of Things (IoT). User or industrial devices that are connected to the internet including sensors, controllers, and household appliances.

Interoperability. The ability of two or more systems to exchange health information and use the information once it is received.

Intervention. An action or ministration that produces an effect or is intended to alter the course of a pathologic process.

Iron triangle. A population health management model focused on three key aims of healthcare delivery: access, quality, and cost.

Lean. A set of management practices to improve efficiency and effectiveness by eliminating waste.

Lean six sigma. A philosophy of improvement that values defect prevention over defect detection.

Life expectancy. The average number of years that a person could expect to live if he or she experienced the age-specific mortality rates prevalent in a given country in a particular year.

Long-term care. A type of care traditionally provided in nursing homes, providing patients who can no longer be cared for at home or in assisted living with support for both daily living activities and complex medical problems.

Long-term care hospital. An inpatient facility for those demonstrating a great deal of medical complexity and requiring an extended period of medical care and hospitalization.

Long-term services and supports (LTSS). Home and community-based services and facility-based settings.

Magnet Recognition Program. An American Nurses Credentialing Center award that recognizes organizational commitment to nursing excellence.

Mail-order drugs. Drugs that can be ordered through the mail.

Managed care plans. Managed care plans generally provide comprehensive health services to their members and offer financial incentives for patients to use the providers who belong to the plan.

Managed care organizations (MCOs). Integrated and

coordinated organizations designed to provide care to a specific patient population.

Maximum out-of-pocket expense. The annual dollar amount limit a participant or family is required to pay out-of-pocket in addition to the plan deductible.

Meaningful use. The use of certified electronic health record by healthcare providers to improve the safety, efficiency, and quality of care.

Medicaid. A cooperative federal/state public health insurance program that provides access to comprehensive health coverage that may not be affordable otherwise for eligible low-income adults, children, pregnant women, elderly adults, and people with disabilities.

Medical loss ratio. The percentage of insurance premium dollars that a health plan spends on medical care for policyholders and quality improvement efforts, rather than on administrative costs. The Affordable Care Act set minimum MLR standards between 80-85% for insurers in the United States.

Medicare. A federal public health insurance program that provides health insurance coverage to nearly all Americans aged 65 and older and people who have received federal disability payments for two or more years, those with end-stage renal disease, and amyotrophic lateral sclerosis.

Medicare Part A. A program within Medicare that

provides hospital coverage to all Medicare recipients receive at no cost.

Medicare Part B. Also known as Supplementary Medical Insurance (SMI), this helps cover doctors' services and outpatient care.

Medicare Part C. A voluntary program within Medicare that is an alternative to Parts A and B and provides coverage through private organizations, such as health maintenance organizations, for the same services.

Medicare Part D. A program within Medicare that provides prescription drug coverage.

Medical tourism. A patient intentionally crosses a border to seek medical care that will typically require out-of-pocket payment for services.

mHealth. Medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices (mobile health).

Moral hazard. A problem in the health insurance industry caused by asymmetry in actions after insurance is purchased, such as when a buyer of insurance is incentivized to use more services because they will bear a smaller share of their medical care costs.

Network management. The process of identifying and contracting with preferred providers who offer either lower fees or lower utilization of services and steering patients to them, through benefit design or by requiring referrals.

Network model – A model in which the health maintenance organization contracts with multiple provider groups, either single or multispecialty, to provide services to its members.

Organizational health literacy. The degree to which organizations equitably enable individuals to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.

Out-of-network providers. Healthcare providers who have not accepted contracted rates with the insurer. As a result, services received outside the network of healthcare providers with contracted rates typically carry a higher cost to the insured person.

Overall limits. Restrictions that apply to all or most insurance benefits under the plan, as opposed to selected individual benefits.

Palliative care. A type of care that focuses on managing the chronic conditions of a patient with the goal of providing comfort and the highest quality of life possible.

Pandemic. Denoting a disease affecting or attacking the population of an extensive region, country, or continent.

Patient-centered. Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

Patient-centered medical home (PCMH). A multidisciplinary approach to primary care delivery focused on providing meaningful, holistic care of the patient, both

physical and mental, via an interdisciplinary team of providers under one roof.

Patient Protection and Affordable Care Act (PPACA). Legislation aimed to increase consumers' access to healthcare coverage and protect them from insurance practices that restricted care or significantly increased the cost of care.

Patient safety goals. Guidelines specifically for organizations accredited by The Joint Commission that focus on healthcare safety problems and ways to solve them.

Personal health literacy. The degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions for themselves and others.

Physician-hospital organization (PHO). Alliances between physicians and hospitals for the purpose of helping providers attain market share, improve bargaining power and reduce administrative costs.

Plan-do-study-act (PDSA). A commonly used quality improvement method that allows for refinement of the change to implementation on a broader scale after successful changes have been identified.

Point-of-service (POS) plan. A POS plan is an "HMO/PPO" hybrid, sometimes referred to as an "open-ended" HMO when offered by an HMO. POS plans resemble HMOs for in-network services.

Population health (PopH). The health outcomes of a

group of individuals, including the distribution of such outcomes within the group.

Population health management (PHM). The process of improving clinical health outcomes of a defined group of individuals through improved care coordination and patient engagement supported by appropriate financial and care models.

Post-acute care. Care provided to patients recently released from the hospital and can take place in many settings, including nursing homes and rehabilitation centers.

Prevention. An action to avoid, forestall, or circumvent a happening, conclusion, or phenomenon (e.g., disease).

Pre-authorization. A decision by a health insurer or plan that a healthcare service, treatment plan, prescription drug or durable medical equipment is medically necessary.

Preferred provider organization (PPO). An indemnity plan where coverage is provided to participants through a network of selected healthcare providers (such as hospitals and physicians).

Premium. Agreed upon fees paid for coverage of medical benefits for a defined benefit period.

Primary care. 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.

Prior authorization. A decision by a health insurer or plan

that a health care service, treatment plan, prescription drug, or durable medical equipment is medically necessary.

Prospective utilization review. A form of utilization review done prior to the medical services or procedures being delivered.

Protected health information (PHI). Individually identifiable health information that is transmitted or maintained in any form or medium (electronic, oral, or paper) by a covered entity or its business associates, excluding certain educational and employment records.

Public health. The science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities, and individuals.

Quality. The degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

Reinsurance. The acceptance by one or more insurers called reinsurers or assuming companies, of a portion of the risk underwritten by another insurer contracted with an employer for the entire coverage.

Retrospective utilization review. A form of utilization review done after the services are provided and the bill is delivered.

Risk. The chance of loss or the perils to the subject matter

of an insurance contract; also: the degree of probability of such loss.

Robotic process automation (RPA). The use of automation technologies to mimic back-office tasks of human workers, such as extracting data, filling in forms, moving files, et cetera.

Robotic surgery. A method of performing surgery using very small tools attached to a robotic arm.

Self-insured plan. A plan offered by employers who directly assume the major cost of health insurance for their employees.

Six Sigma. A model for quality improvement that uses a measurement-based strategy for process improvement and problem reduction applied to improvement projects.

Skilled nursing facility care. Care ordered by a physician, delivered by skilled nursing or therapy staff, and paid for by Medicare Part A for a fixed period of time (up to 100 days).

Social determinants of health. The conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels.

Staff model. A model in which the health maintenance organization directly employs providers on a salary basis.

Stop-loss coverage. A form of reinsurance for self-insured employers that limits the amount the employers will have to pay for each person's healthcare (individual limit) or the employers' total expenses (group limit).

Telehealth. The provision of non-clinical services such as provider training and medical education.

Telemedicine. The use of electronic communications and software to provide clinical services without the need for an in-person visit to the doctor's office.

Triple aim. A population health management model focused on simultaneously improving the patient experience of care, improving population health, and reducing the per capita costs of care.

Usability. The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.

Usual, customary, and reasonable (UCR) charges. The charge that is the provider's usual fee for a service that does not exceed the customary fee in that geographic area and is reasonable based on the circumstances.

Utilization review (UR). The evaluation of the medical necessity, appropriateness, and efficiency of the use of healthcare services, procedures, and facilities under the provisions of the applicable health benefits plan, also known as utilization management.

Value-based reimbursement models. Reimbursement models used by Medicare, Medicaid, and private insurance companies that use financial incentives to reward quality healthcare and positive patient outcomes.

Value stream mapping. A lean tool that employs a flowchart documenting every step in the process.

Veterans Affairs Healthcare System (VAHS). A national system of clinics and hospitals that provides healthcare services for military veterans.

Wearable technology. Small devices using computers and other advanced technology designed to be worn in clothing or directly against the body for the purpose entertainment and other tasks like monitoring physical activity.

Wellness. The optimal state of health of individuals and groups, expressed as a positive approach to living.