

Summary

The US health care system consists of a multitude of subsystems and is subject to different regulations in different states. There is no universal health care coverage, and a significant number of individuals do not have health insurance. Health insurance may be funded by the state (e.g., Medicare), employers, individuals, or a combination thereof. There are two widely used health insurance payment models, which are used by both public and private health insurance systems: fee-for-service and value-based performance models.

Epidemiology

- According to the US Census Bureau reports published in September 2020: [1]
 - 8% (26.1 million) of Americans did not have health insurance during 2019.
 - 92% of Americans had health insurance coverage during 2019.
 - 68% via private insurance
 - 34.1% via public insurance

Health insurance funding

Government-funded health insurance

- **Definition:** any of the federal social health care programs enacted with the revisions to the Social Security Act aimed at providing health insurance to specific groups

Medicare [2]

- **Eligibility**
 - Individuals \geq 65 years old
 - Patients with end-stage renal failure or amyotrophic lateral sclerosis
 - Individuals with permanent disabilities **irrespective** of age
- **Parts:** The two main coverage options are Original Medicare (part A and part B) and Medicare Advantage (part C). Individuals also have the option of adding part D to their main coverage.
 - Part A: hospital care, hospice care for terminal patients, skilled nursing facility care (if services are needed daily after a minimum 3-day stay in a hospital)
 - Part B: doctors' fees, emergency department visits, diagnostic tests, rehabilitation
 - Part C (Medicare Advantage Plan): all services covered by parts A and B, plus a private insurance plan
 - "All in one" plan that allows people to enroll in a private health insurance plan approved by Medicare
 - Medicare pays other organizations, e.g., insurance companies, hospital systems, and managed care organizations, to provide care.

- Part D: prescription drugs

Medicaid [3]

- **Funds:** jointly funded by the state and federal government
- **Eligibility**
 - Nonfinancial
 - Beneficiaries must be American citizens or lawful permanent residents.
 - Individuals must live in the state in which they receive their coverage.
 - Financial: households with an income at or below 133% of the federal poverty level (which includes individuals, families, and pregnant women)
 - All low-income Americans < 65 years of age
 - Children at 133% of the federal poverty level are covered in every state.
 - Coverage for adults with an income at or below 133% of the federal poverty level is decided by each state.
- **Coverage:** hospital care, laboratory tests, diagnostic tests (such as x-rays), doctors' visits, skilled nursing care, vaccinations, home health care

Children's health insurance program (CHIP)

- **Eligibility:** uninsured children of families with low income, but not low enough to qualify for Medicaid

Private health insurance

- Used by more than half of the American population
- May be employer-sponsored (most common) , college-sponsored, or purchased individually

Self-pay patient [4]

- Individuals who pay out-of-pocket for a health care service and do not have any third-party coverage from a government entity (e.g., Medicare, Medicaid), private health care insurer, or plan
- Typically includes patients who:
 - Cannot or do not want to pay a fixed monthly premium
 - Have chronic or preexisting conditions not covered by an insurance company

Health insurance basics

Health insurance premium [5][6]

- **Definition:** a payment made to the health insurance provider, typically monthly. Premiums usually depend on the policy type and individual risk.
- **Characteristics**
 - The premium depends on the type of policy and individual factors (e.g., individual or family plan).
 - The deductible, copayments, and coinsurance are paid separately.
 - It can be paid by individuals (monthly), an employer, or both.
 - If individuals receive insurance through an employer, they pay the premium through payroll deductions.

- Generally, plans with a higher premium will have lower out-of-pocket expenses (i.e., a lower deductible and copayments).

Out-of-pocket expenses

- **Definition:** payments made by individuals to their insurance company, including deductibles, coinsurance, and copayments
- **Out-of-pocket maximum**
 - An annual limit on the amount of money that an individual has to pay for covered health care services in a year (not including premiums)
 - After this amount is reached, all covered health services are paid in full by the health plan for the rest of that plan year.
 - Payments that apply to the deductible, copays, and coinsurance also apply to the out-of-pocket maximum.

Deductible [4][5]

- **Definition:** a predetermined amount paid out of pocket by the patient before the insurance company begins to pay
- **Types of deductible**
 - Comprehensive deductible: applies to and includes all areas of coverage of the health insurance policy
 - Noncomprehensive deductible
 - Applies to specific areas of coverage or medical expenses in a health insurance policy
 - Not all medical areas of coverage in the plan have a deductible.
 - Individual deductible: a deductible that each individual in the plan pays
 - Family deductible: a deductible that usually applies to two or more individuals
 - Embedded deductible
 - Two deductible amounts within one insurance plan (individual and family)
 - Each member contributes the same amount towards meeting the deductible.
 - Once a member of the plan meets the deductible, the individual becomes eligible for copayment and coinsurance (out-of-pocket expenses).
 - True family deductible
 - Members can meet the deductible by pooling expenses.
 - Can be met by all members or just one member of the family
 - There is no limit to the amount each member can pay towards meeting the family deductible.
 - Once the deductible is met, the entire family is eligible for copayment and coinsurance.
- **Characteristics**
 - Typically annual
 - After the deductible is paid, the individual usually only pays for copayment or coinsurance for covered services.
 - Generally, plans with lower monthly premiums have higher deductibles and vice versa.
 - If the individual is healthy and does not expect costly medical services: higher deductible and lower premium
 - If the individual has a medical condition and expects costly medical services: lower deductible and higher premium
- **Example:** A \$2,000 deductible means the individual needs to pay \$2,000 in medical expenses. After reaching that amount, the insurance provider covers the remainder.

Copayment [4][5]

- **Definition:** a fixed amount paid by the patient to a health service provider at the time of the service (e.g., doctor's appointment, filling of a prescription)
- **Characteristics**
 - Typically defined in the insurance policy

- Paid each time the patient receives medical services
- The amount can vary by the type of service (e.g., prescription drugs, lab tests).
- Meant to discourage individuals from seeking unnecessary medical care
- Sometimes counts towards meeting the deductible
- Generally, plans with lower monthly premiums have higher copayments and vice versa.
- **Example:** a health insurance plan that allows a doctor's appointment cost of \$100 and sets the copayment for this service at \$20
 - If the individual has not reached the deductible, they will pay the full amount for the visit (\$100).
 - If the individual has reached the deductible, they will pay \$20 at the time of the visit.

Coinsurance [4][5]

- **Definition:** a payment of a predetermined **percentage** made to the insurance provider after the individual has met the deductible
- **Characteristics**
 - Refers to the individual's share of the costs of a health care service
 - Must be paid before any policy benefit is paid by the insurance company
 - This applies to covered services and is paid in addition to the copayment.
 - Typically paid after the individual meets the deductible
 - Billed by the provider directly to the individual
 - Generally, plans with low monthly premiums have higher coinsurance and vice versa.
- **Example:** If an insurance plan covers 85% of the costs, the individual is responsible for the remaining 15% (this 15% is the coinsurance).

Health insurance network (preferred providers) [5]

- **Definition:** a group of health care providers, suppliers, and facilities that have a contract to provide services to members of health insurance plans at a discounted rate
- **In-network**
 - A health care professional, hospital, and/or service provider who has a contract with the insurance company to provide services at a discounted price
 - In-network copayment and coinsurance usually cost less than out-of-network copayment and coinsurance.
 - Exclusive provider organization (EPO) and health maintenance organization (HMO) plans only cover in-network care, except in the case of a medical emergency.
- **Out-of-network**
 - A health care professional, hospital, and/or service provider who does not have a contract with the insurance company to provide services at a discounted price
 - Out-of-network copayment and coinsurance usually cost more than in-network copayment and coinsurance.
 - Preferred provider organization (PPO) plans may have out-of-network care coverage. However, the out-of-pocket cost for out-of-network care may be significantly higher than for in-network care.

Health care payment models and health insurance plans

Health care payment models [4]

Fee-for-service

- Health care providers are compensated by the insurer and/or patient for **each individual service** provided (e.g., individual laboratory tests, imaging studies, procedures).
- Dominant payment model in the US
- Incentivizes health care providers to overtreat patients because compensation is based on the number of services provided
- Associated with high overall health care costs
- Discounted fee-for-service
 - A fixed payment schedule with discounted prices negotiated between health care providers and payers for each individual service
 - Often used by PPOs
- Per diem payment (per day payment)
 - A fixed amount per patient per day paid to the health care provider for a specific care service provided, regardless of the actual costs involved in providing services for a particular patient.
 - Often used for reimbursement of inpatient services
 - The rates are typically stratified. A hospital can be paid different rates depending on the service provided (e.g., a hospital is paid a rate for a surgical day and a higher rate for a critical care unit day).

Capitation

- Health care **practitioners** are compensated a **fixed amount** by the insurer during each payment period, regardless of the actual amount of health care services utilized by the patient.
- Often used by HMOs
- The payment period is usually monthly.
- Incentivizes health care providers to deliver efficient care (e.g., cost-effective preventive health care to avoid larger downstream costs)
- Carries the risk that patients will be undertreated because compensation is not based on the quantity or quality of services provided

Global payment [7][8]

- The insurer makes a **single, fixed payment** to a health care organization for the needs of a **population of patients** (i.e., enrollees in a health plan) during a specified time period (e.g., monthly or yearly) for expenses associated with an incident of care.
- Usually paid to a single health care organization
- Covers a wide range of services: typically includes physician fees, hospital services, tests, prescription drugs, and other services, such as follow-up visits
- Often used for nonurgent surgery, with the coverage extending to all costs associated with the pre- and postoperative visits
- Incentivizes health care providers to coordinate, deliver efficient care, and keep expenses low
- Holds providers fully accountable for compensated services

Bundled payment [9][10]

- The insurer makes a **fixed payment** to a health care organization for **all services** provided for a **clinically-defined episode** of care (e.g., hip replacement, cholecystectomy).
- The compensation is distributed among all health care providers involved in the care of the patient during that defined episode.
- Incentivizes health care providers to deliver coordinated and efficient care (e.g., health care providers avoid unnecessary procedures, duplicate tests)
- Typically based on the estimated cost of all of the services a patient would require during a single medical treatment episode or procedure
- Example: a payment beginning 2 days prior to a knee replacement surgery and extending 30 days past a patient's discharge from the hospital for this procedure

Pay for performance (P4P) [11][12][13]

- A payment model in which compensation depends on health care providers meeting certain metrics for the quality and efficiency of care provided
- Calculated using specific measures of quality and by determining the overall health of populations
 - Providers are required to report specific metrics (e.g., safety, clinical care, efficiency and cost reduction, and patient and caregiver-centered experience) to payers and demonstrate improvement.
 - Providers typically track and report data on hospital readmissions, adverse events, population health, and patient engagement.
- Improves value and quality of care by encouraging adherence to clinical guidelines and proven best practices (move from volume to value and better outcomes) through financial incentives
- Motivates health care providers to protect and improve their reputation; improves accountability and transparency
- Disadvantages
 - Reimbursement issues: Medicare penalizes hospitals with poor performance.
 - Payments are reduced by 2% and the funds are redistributed if the provider's performance or quality of care measures are unsatisfactory.
 - Hospitals with high readmission rates for specific episodes of care (i.e., myocardial infarction, heart failure, COPD, pneumonia) have their payments reduced by up to 3%.
 - Hospitals in the bottom quartile of performance based on nosocomial conditions with high readmission rates (e.g., CLABSI, CAUTI, surgical site infections, MRSA, C. difficile infections) have their payments reduced by 1%.
 - High administrative costs to gather data
 - Reduces access for socioeconomically disadvantaged patients: Health practitioners may not be incentivized to treat these patients, as they may have difficulty attending follow-ups and paying for treatment, which may lower performance on P4P measures.

Common types of health insurance plans

Health insurance plans				
Common health insurance plans	Health care delivered through	Coverage	Specialist care	Member costs
Health maintenance organization (HMO)	<ul style="list-style-type: none"> • Network of doctors, specialists, and hospitals • The primary care physician is the first contact person. 	<ul style="list-style-type: none"> • No coverage for out-of-network providers, except emergency visits that are covered at in-network rates • Low out-of-pocket payments 	<ul style="list-style-type: none"> • Referral needed from primary care physician to see a specialist • Women have direct access to obstetric and gynecological care. 	<ul style="list-style-type: none"> • Low (most affordable)
Point-of-service (POS)		<ul style="list-style-type: none"> • Coverage for out-of-network providers • High out-of-pocket payments 	<ul style="list-style-type: none"> • Referral needed from primary care physician to see a specialist 	<ul style="list-style-type: none"> • Moderate
Preferred provider organization (PPO)	<ul style="list-style-type: none"> • Network of doctors, specialists, and hospitals • No primary care physician needed 	<ul style="list-style-type: none"> • Coverage for out-of-network providers • High out-of-pocket payments 	<ul style="list-style-type: none"> • Specialists can be seen without a referral from a primary care physician. 	<ul style="list-style-type: none"> • High
Exclusive provider organization (EPO)		<ul style="list-style-type: none"> • No coverage for out-of-network providers 		<ul style="list-style-type: none"> • Low

Health insurance plans				
Common health insurance plans	Health care delivered through	Coverage	Specialist care	Member costs
Accountable care organization (ACO)	<ul style="list-style-type: none"> Coordinated network of doctors, specialists, and hospitals that are voluntarily enrolled 	<ul style="list-style-type: none"> Medicare patients 	<ul style="list-style-type: none"> Enrollment of specialists on a voluntary basis 	<ul style="list-style-type: none"> Varies

Social aspects of health care

Just and equitable health care benefits a society as a whole by ensuring certain standards of public health that, in turn, reduce the burden of disease on the entire population. Accordingly, a health care system should strive to provide access and treatment to all population groups regardless of identity and socioeconomic status, while ensuring that underprivileged groups are not ignored.

Recognizing and addressing inequalities due to social health determinants can improve the health of the most vulnerable and at-risk groups.

Social justice in health care

- **Definition:** delivery of high-quality and fair treatment, regardless of an individual's age, race, ethnicity, economic status, disability, or sexual orientation
- **Types of social injustice in health care**
 - Distributive injustice: allocation of health care resources to the disadvantage of certain individuals or groups who require said resources to the same degree as those to whom they are made available (e.g., coverage of disease-modifying multiple sclerosis therapies for uninsured women but not uninsured men, who less commonly develop the disease but benefit equally from the treatment)
 - Relational injustice (identity devaluation): allocation of health care resources to the disadvantage of certain individuals or groups due to prejudice (e.g., refusing health care to individuals with limited proficiency in English)
- **Measures to improve social justice in health care**
 - Measures to improve distributive justice
 - Allocate resources in ways that benefit more people (e.g., set up a budget inclusive of underserved populations).
 - Further develop distributive justice indices.
 - Foster patient relationships (e.g., involve patients in the decision-making process and emphasize their involvement in determining outcomes).
 - Measures to improve relational justice
 - Provide training to ensure health care providers are culturally competent and advocate for patient rights.
 - Create diverse care delivery models (e.g., by increasing diversity in recruiting of health care providers, on-site interpreter services, hiring staff members that speak multiple languages pertinent to the community it serves).
 - Provide virtual clinical services to enhance access to the most vulnerable groups and to facilitate scheduling (e.g., telemedicine, remote patient monitoring).
 - Allocate funds to ensure equitable care is provided to underserved populations.

Health care disparity [14][15][16]

- **Definition:** differences in health care quality and/or outcomes among specific populations due to economic, social, and/or environmental factors
- **Measured by:**

- Access to health care
- Quality of care received
- **Consequences**
 - Earlier onset of illness
 - Severe disease
 - Poorer quality of care
 - Reduced lifespan

Social determinants of health [17]

- **Definition:** the political, cultural, and socioeconomic conditions into which individuals are born and with which they live that have an impact on health, e.g., education, the environment, nutrition, wealth distribution, gender, race, and/or access to health care
- **Race or ethnicity [16]**
 - On average, minorities, particularly black, Asian, and Latino Americans, have more limited access to health care and other community health resources.
 - These individuals are often more acutely ill when they do find a source of care and incur higher medical costs.
 - Studies have shown that physicians tend to have unconscious racial bias, leading to poorer communication and lower quality of care.
- **Gender roles, identity, and sexual orientation**
 - Members of the LGBTQ community may experience discomfort with genital, breast, or rectal exams, or when discussing sexual issues.
 - Judgemental attitudes toward patients compromise the doctor-patient relationship and physician's ability to provide good health care. They also discourage patients from seeking medical attention
- **Education and literacy**
 - Considered the strongest social determinant of health
 - An individual's level of education influences their type of employment and potential income, which in turn influence an individual's socioeconomic status
 - Low literacy can negatively impact an individual's health outcome
 - Without the appropriate literacy skills, patients may not be able to obtain and understand basic health information and services needed to make appropriate health decisions for themselves.
 - Results in barriers to health care and insurance access
 - Associated with adverse health outcomes due to underutilization of preventive services, increased rates of hospitalization, nonadherence to treatments, and higher mortality rates [16]
- **Socioeconomic status [16]**
 - Mostly determined by race/ethnicity in the US
 - Low socioeconomic status often involves reduced access to job opportunities and higher education.
 - Income determines access to social and health resources (e.g., timely health care, preventive health care, healthy habits, food security).
 - Low-income populations are more likely to be targeted by the fast food and tobacco industries, which encourage unhealthy habits. [17]
- **Housing**
 - Access to and/or affordability housing (e.g., unaffordability increases the risk of homelessness)
 - Environmental hazards are associated with poor housing conditions (e.g., presence of mold, water leaks, lead paint)
 - Neighborhood conditions
 - Access to nutritious food, transportation, parks, clean water, unpolluted air, low crime rates, safe streets, and sidewalks
 - Individuals living in disadvantaged neighborhoods are more likely to have poor health outcomes and chronic conditions.
- **Mental health and disabilities**
 - Interpersonal safety: Individuals who live in households in which family members are abusers, have committed crimes, and/or have drug and alcohol use disorders are more likely to have mental health and/or substance use disorders later in life.
 - Individuals with disabilities have more challenges accessing economic opportunities and resources (e.g., technology, fitness facilities).

- Negatively affects socioeconomic status and social environment
- Leads to decreased access to health care

Approach towards social determinants of health [17][18]

1. Learn about how social factors influence health.
2. Acknowledge and address implicit bias.
 - Look for behaviors that signal mistrust in the patient.
 - Inquire about past experiences of racism in a health care setting and acknowledge the possible harm done.
 - Treat patients with dignity and respect.
3. Inquire about and seek to understand the patient's community.
 - Create a safe space for disclosure of information.
 - Evaluate a patient's mental health and social support systems.
 - Inquire about cultural preferences/norms (e.g., culturally-imposed beliefs, awareness and acceptance of cultural differences, procedures and tests that go against a patient's culture).
 - Determine how the patient wants to address their health problem.
 - Inform the patient that members of the community can be present at consults.
4. Establish a rapport with the local health departments and county and city health officials.
5. Encourage health care teams to ask patients about their social challenges and connect patients with resources within their communities (e.g., organizations that provide financial assistance, food assistance, job placement, and training).
6. Develop processes that **promote health literacy** by presenting information clearly and adapting to the patient. [19]
 - In the case of a language barrier, document the language preference and assess the need for medical interpretation.
 - Maintain eye contact and avoid speaking too quickly.
 - Break down information by repeating instructions in an understandable manner (i.e., use plain language instead of medical jargon or technical language).
 - Use visual aids to illustrate a procedure or condition.
 - Assess the patient's understanding of the information provided without shaming them or causing embarrassment.
 - Have the patient explain the instructions themselves and/or demonstrate the relevant procedures.
 - Provide the patient with forms and educational resources in their own language.
 - Schedule follow-up appointments with a family member present.

Health care access

US Congress and state legislatures have implemented a number of policies in attempts to extend and guarantee access to health care.

Emergency medical treatment and labor act (EMTALA) [20][21]

- **Definition:** an act passed by Congress in 1986 that requires emergency departments to evaluate, treat, and stabilize patients presenting with emergency medical conditions (including labor) regardless of the patient's ability to pay for the treatment provided
- **Aims**
 - Ensure public access to emergency services
 - Reduce the incidence of patient dumping and inappropriate discharging
 - Prevent refusal to treat indigent patients
- **Characteristics**

- Hospitals cannot refuse emergency treatment for any reason, including age, sex, religious affiliation, or other characteristics.
- Hospitals should not obtain prior authorization from the insurance company before screening or stabilizing a patient.
- Hospitals can be held liable for injuries or deaths that result from refusing to admit or treat a patient.
- **Disadvantages**
 - EMTALA has led to inappropriate use of the emergency department by uninsured patients and subsequent overcrowding.
 - Negatively affects the efficiency and type of services provided (e.g., prolonged waiting times, stressful therapeutic environments, poor clinical outcomes)
 - Reimbursement issues [22]
 - Health plans deny or reduce payments, claiming:
 - Treatment was not medically necessary.
 - The individual did not have an emergency condition.
 - Treatment was provided at an out-of-network hospital.
 - The number of physicians willing to serve in emergency departments has declined due to uncompensated care.
 - Hospitals are closing emergency departments and are under increasing financial strain: Hospitals made up for uncompensated care by charging more for services for the insured. However, due to changes in the payment system, this is no longer possible.

Critical access hospital [23]

- **Definition:** a designation created by Congress in 1997, through the Balanced Budget Act, that is assigned to small hospitals in rural areas by the Centers for Medicare and Medicaid Services in order to ensure and improve access to health care services
- **Aims**
 - Improve access to health care services in rural areas
 - Reduce the financial vulnerability of hospitals in rural areas
- **Characteristics**
 - Specific requirements must be met (e.g., ≤ 25 inpatient beds, located ≥ 35 mi or ≥ 56 km from another hospital, continuous emergency care services).
 - Each state decides how Medicaid reimbursements will be paid (e.g., pay-for-performance, fee-for-service).
 - Critical access hospitals need to maintain quality assurance and improvement with organizations or hospitals that are part of the network.
- **Disadvantages**
 - Negatively affects the efficiency and type of services provided due to challenges in recruitment and retention of health care professionals
 - Reimbursement issues lead to financial insecurity for some hospitals.

Affordable care act (Obamacare) [24]

- **Definition:** a comprehensive health care reform law made by the US Congress in 2010 to ensure and expand affordable health care
- **Aims**
 - Make health insurance affordable for more people, especially individuals who cannot afford it
 - Expansion of eligibility for Medicare
 - Support health care delivery models that lower the costs of health care
- **Characteristics**
 - Individuals are required to have health insurance for a minimum of 9 months out of every year.
 - Dependent children are covered until they reach the age of 26.
 - It subsidizes the cost of health insurance for people who have income below the federal poverty level.
 - Individuals pay reduced copayments and deductibles.

- Services such as preventive screenings, prescription drugs, laboratory tests, hospitalization, and outpatient, maternity, mental health, and rehabilitative services are included.
- **Disadvantages**
 - Increased costs for insurance companies
 - Beneficiaries need to show proof of employment before being eligible for Medicaid.

Patient-centered medical home (PCMH) [25]

- **Definition:** a health care delivery model that provides comprehensive advanced primary care coordinated through the individual's primary care physician
- **Aims**
 - Facilitate patient and physician partnership
 - Patients receive necessary treatment at the time and place they need it
 - Improve quality and experience for patients and health care providers
 - Lower medical costs
- **Characteristics**
 - Patient-centered approach
 - The primary care physician is the first point of contact.
 - A multidisciplinary health care team is assembled according to the patient's need
 - Based on five core functions
 - Accessibility and continuity of services
 - Comprehensive and coordinated care
 - Patient and caregiver satisfaction
 - High-quality care and patient safety
 - Planned care and population health management
- **Disadvantages**
 - Not enough data to assess effectiveness
 - Not enough payers currently adopting this model
 - Evidence on cost is mixed.

Assertive community treatment [26][27]

- **Definition:** an integrated treatment approach for patients with severe psychiatric conditions (e.g., schizophrenia, bipolar disorder) who are at ongoing risk of hospitalization, incarceration, and/or unstable housing
- **Aims**
 - Provide individuals with the resources and support needed for management and recovery outside of health care institutions (e.g., home, public parks, shelters)
 - Aid in the medical and psychiatric management of the individual's condition
 - Promote stable community living
 - Facilitate access to community resources
- **Characteristics**
 - Long-term and consistent contact through a multidisciplinary team
 - Low client-to-staff ratio (approx. 10 clients per staff member)
 - Flexible service models to address the needs of specific populations and/or communities

- **Disadvantages** [28]

- Broad variability across models makes it difficult to compare outcomes
- Funding complexity
- Ethical concerns about limiting the patient's autonomy

Health care fragmentation

- **Definition:** a lack of integration and coordination between the services of health care providers and/or organizations

- **Causes** [29][30][31]

- Reimbursement models that disincentivize care coordination (e.g., fee-for-service)
- Prioritization of individual over shared accountability among health care providers in both medical training and practice
- Lack of accessibility for health care providers or organizations to health care information generated by other providers or organizations
- Breakdown in communication
- Window-shopping for services by patients and overutilization of specialist services
- Variation among the practices and preferences of health care providers
- Complexity of care required for patients with multiple comorbidities

- **Consequences** [30][32]

- Increased incidence of medical errors
- High costs for health care
- Gaps and discontinuities during transitions of care
- High workload for health care providers
- Increased risk of provider burnout
- Unnecessary repetition of diagnostic and therapeutic interventions

- **Prevention**

- Integrated delivery systems (IDS)
 - Organized networks that contractually require health care providers in the network to coordinate care across settings for a particular patient population
 - IDS are accountable as a whole for both economic and clinical outcomes of the services they provide. [29][33]
 - Principles of prevention of IDS include:
 - Team-based care and multidisciplinary care models
 - Require all providers in the network to use the same practice guidelines.
 - Utilization of reimbursement models and insurance plans that incentivize care coordination (e.g., pay-for-performance, global payment, health maintenance organizations, accountable care organizations)
 - Ensure the correct proportion of personnel to demand in general and of physicians to specialists in particular
 - Provision of care according to the least invasive and most efficient option within the network
- Electronic health record (EHR) systems with a high degree of interoperability [34][35][36]
 - EHR interoperability enables authorized individuals to generate and share protected health information within and across the boundaries of an organization.
 - The 2009 HITECH Act was passed to encourage the adoption of EHR systems, but a lack of interoperability remains a major impediment to the integration of health care services.
 - Under the 21st Century Cures Act, the Department of Health and Human Services and Centers for Medicare & Medicaid Services have set up programs to incentivize the use of certified, interoperable EHR systems.
- Handoffs among providers between shifts, following inpatient transfers, and before patient discharge [37]
- Introduction of systems-based practice curricula in medical education [38]

Related One-Minute Telegram

- One-Minute Telegram 60-2022-1/3: Real-time prescription price transparency reduces costs for patients

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