



Medical Errors

How Your Healthcare
May Be Harming You

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OLLI Fall 2023 Semester
October 5, 2023

SESSION 5

US HEALTHCARE SYSTEM/INDUSTRY

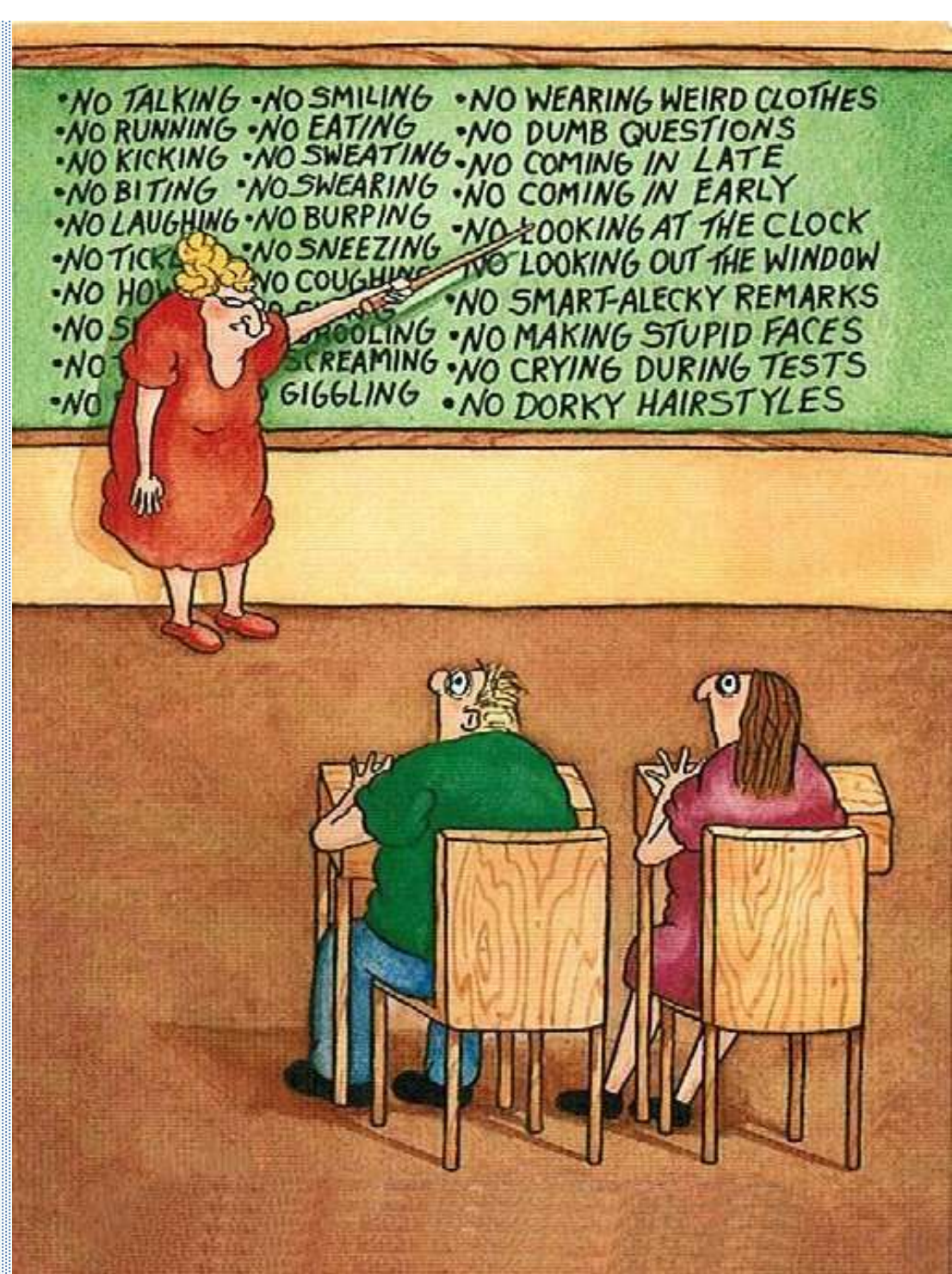
Plan for the Course

- Session 1: Introduction and Definitions
- Session 2: Diagnostic Errors
- Session 3: Medication Errors, Surgical Errors
- Session 4: Communication Errors
- **Session 5: US Healthcare System/Industry**
- Session 6: Science and Technology
- Session 7: Comparison with Other Countries
- Session 8: Solutions, Reduction, Prevention

Plan for the Session

- Concepts of system
- Private Healthcare
- Public Healthcare
- Costs of US Healthcare
- Direct to Consumer Advertising (DTCA)
- Workforce issues
- Problems with US Healthcare

Some Housekeeping Rules Before We Begin



SYSTEMS

Concepts of “System”

A regularly interacting or interdependent group of items forming a unified whole and influenced by related forces.



A set of elements that together perform one or more common functions and that are in or seem to be in equilibrium.



A social, economic, or political organization or practice forming a network that distributes something or serves a common purpose.



U.S. Healthcare System

- It is often said that healthcare in the US does not really function as a “System”.
- Critics argue that the multiple parts do not have commonality or function as a whole and that there is no coherent unity.
- However, many experts agree that even though the above may be true, just try to take it apart to find how strong and unified it can be!!!

U.S. Healthcare System

- In the US:
 - we have general distaste for central planning
 - dissemination of medical technologies is not controlled
 - government insurers do not use their potential bargaining power
 - lack of centralized prices and prospective budgeting
 - absence of guaranteed insurance coverage
 - more limited government involvement
- The left and the right agree that reforms are necessary to control spending, but don't agree on how to do so.

Institute of Medicine

- Two IOM reports, *To Err Is Human* and *Crossing the Quality Chasm* raised awareness about gaps in the quality of healthcare and patient safety.
- A third report, *Unequal Treatment*, drew attention to disparities in the care rendered to vulnerable groups, like racial, ethnic and low-income populations.

U.S. Healthcare System

- The decentralized and fragmented nature of the US healthcare delivery system (or *non-system*) creates unsafe conditions for patients, and impedes efforts to improve safety.
- Even within hospitals and large medical groups, there are rigidly-defined areas of specialization and influence.

U.S. Healthcare System

- Implementing clinical information systems to access full patient information is difficult when care is provided by a loose affiliation of entities and providers.
- Unsafe care is one of the prices we pay for not having organized systems of care with clear lines of accountability.

U.S. Healthcare System

- The fate of future healthcare reforms will depend greatly on future election results.
- The gap between the views of the 2 major political parties continues to widen, with little work towards finding common solutions.
- There is no effective dialogue to change the system, which slows down innovation and improvement.

PRIVATE HEALTHCARE

Carle



promise
healthcare



BlueCross
BlueShield

aetnaSM

CarePlus
HEALTH PLANS, INC.

WellCare[®]

UA United American
Insurance Company
Since 1947

UnitedHealthcare[®]

UnitedHealthOne[™]

Golden Rule[®]
A UnitedHealthcare Company



ASSURANT

Humana[®] HUMANA[®]
one



Cigna[®]

FREEDOM
HEALTH

OPTIMUM
HealthCare, Inc.

COVENTRY
Health Care

Advocate
Aurora
Health[™]

Private Healthcare

- Usually “Pay-for-Play”: money is exchanged for services or certain activities, with no accumulation or residual benefits.
- **P**ainful and infinite variety of **P**lans, **P**remiums, **P**ayments, **P**rivileges, **P**roviders, **P**rohibitions, and **P**erks.
- Controlled by a few huge corporations which may have many subcontracting smaller groups.

Private Healthcare Providers

- As of 2017, health insurance was most commonly acquired through a group plan tied to an employer, covering 150 million people.
- Other major sources include:
 - Medicaid covering 70M
 - Medicare covering 50M
 - ACA health insurance marketplaces covering 17M

Provider Alphabet Soup

- HMO: Health Maintenance Organization
- PPO: Preferred Provider Organization
- ACO: Accountable Care Organization
- HDHP: High-Deductible Health Plan
- POS Point of Service Plan
- EPO: Exclusive Provider Organization
- PHO: Physician Hospital Organization
- IPA: Independent Practice Association
- FFS: Fee-for-Service Plan
- MCO: Managed Care Organization
- CHIP (SCHIP): Children's Health Insurance Program
- Etc., etc.

Private Healthcare

- The 2004 IOM report found that lack of health insurance causes ~18 K unnecessary deaths every year in the US, while a 2009 Harvard study showed ~45K annual deaths.
- Uninsured, working Americans have about 40% higher mortality risk compared to Americans with private insurance.
- Several studies have indicated an association between expansion of the ACA and better health outcomes.

Private Healthcare Insurers

Company	For Profit	Founded	Members	Revenue 2018
UnitedHealth Group	Yes	1977	49.5 M	\$201.1 B
Anthem	Yes	2014	2 M	\$90 B
Kaiser Permanente	Managed Care Consortium	1945	7 M	\$72.7 B
Aetna	Yes (CVS since 2018)	1853	2 M	\$60.6 B
Cigna	Yes, multinational.	1792	9 M	\$41.6 B
Humana	Yes	1962	14 M	\$53.7 B
Centene Corporation	Yes*	1984	2 M	\$60.11 B
Molina Healthcare	Yes (Medicare, ACA & Medicaid plans.	1980	4 M	\$19.8 B
Health Care Service Corporation (HCSC)	No. Member-owned	1936	15 M	\$4.1 B
WellCare Health Plans	Yes (Centene 2020)	1985	4 M	\$17 B

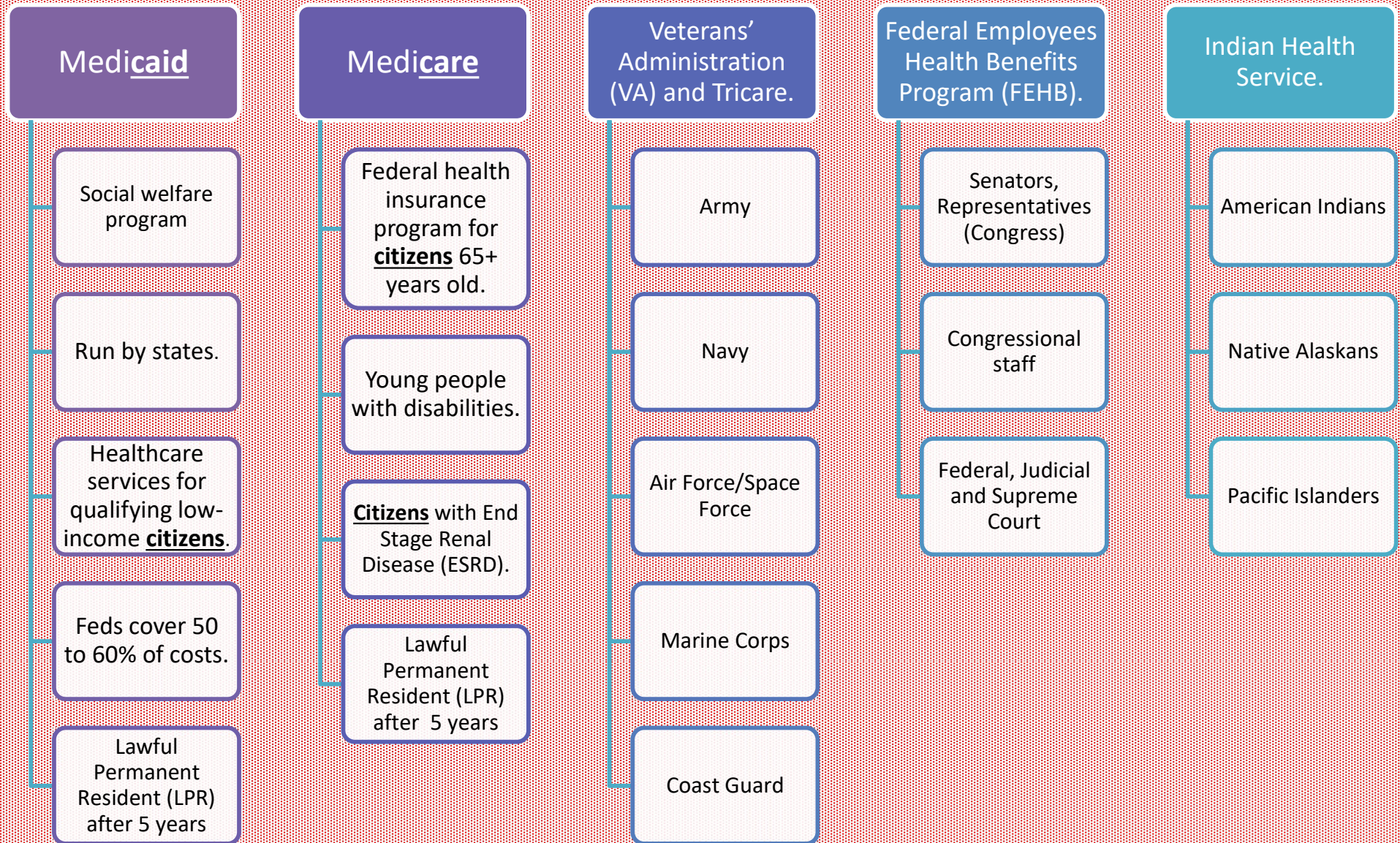
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PUBLIC HEALTHCARE

Public Healthcare Patchwork Quilt



Public Healthcare Entities



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Medicare vs Medicaid

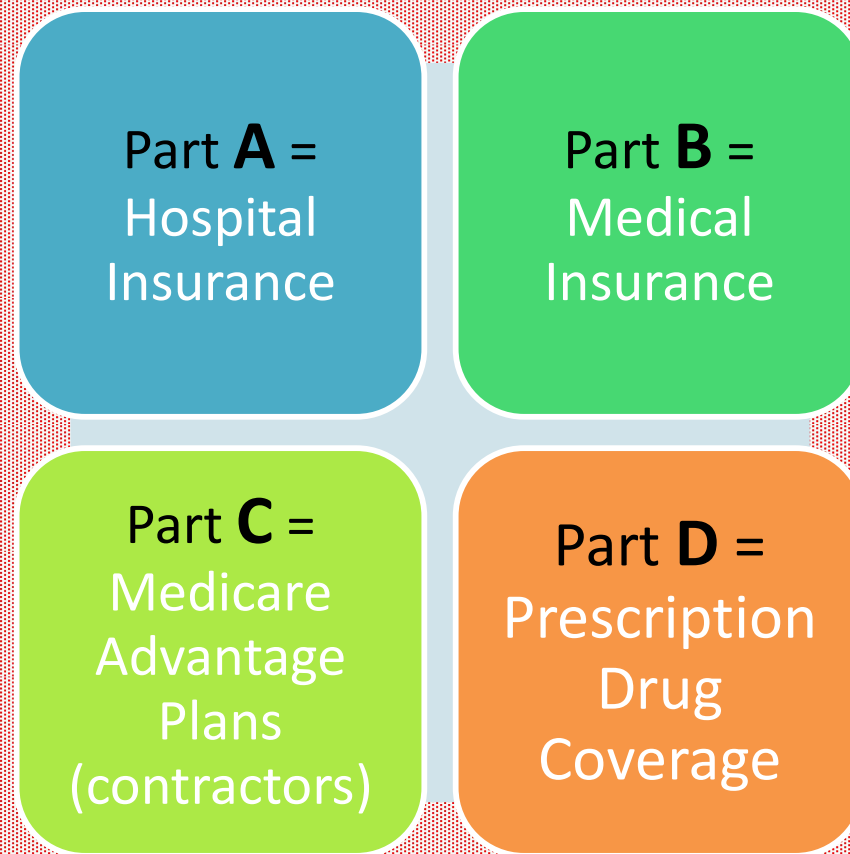
Medicare

- Federal *social health insurance* program for:
 - Citizens age 65 ≥
 - Citizens <65 with certain disabilities
 - Citizens with end-stage renal disease (ESRD).
- Less range of services than Medicaid.
- Part A is free, but Part B requires monthly payment.

Medicaid

- State program with Federal government providing up to ½ of funding.
- Counties may contribute funds too.
- Means-tested, needs-based *social welfare* program.
- Eligibility determined by low income, limited financial resources, and citizenship

Medicare



Medicare Patient Information

Medicare reimburses providers by documented complexity of problem.

Type of History	Chief Complaint	History of Present Illness	Review of Systems	Past, Family, Social History	PAY
Problem-focused	Required	Brief	N/A	N/A	1
Expanded problem	Required	Brief	Problem-Pertinent	N/A	2
Detailed	Required	Extended	Extended	Pertinent	3
Comprehensive	Required	Extended	Complete	Complete	4

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Healthcare and Non-citizens

- If you live in the US, you have a right to receive medical care.
- Federal law prohibits undocumented immigrants from receiving public health insurance, including shopping on the ACA marketplace.
- But you can still get private insurance through your employer or by purchasing your own plan.

Healthcare and Non-citizens

- Undocumented immigrants don't have access to government-sponsored health insurance plans, also called public insurance plans.
- This includes **Medicare**, **Medicaid**, and the Children's Health Insurance Program (CHIP).
- Also, the ACA Marketplace is off the table.

Healthcare and Non-citizens

- To be eligible for **Medicaid**, a non-citizen has to be lawfully present in the US, be a qualified immigrant, and wait 5 years to apply.
- The Personal Responsibility and Work Opportunity Act of 1996 divided immigrants into 2 groups: qualified and non qualified, with only *qualified* immigrants being eligible to receive Medicaid.

Medicaid Eligible qualified non- citizen immigrant

- Lawful permanent resident (LPR)
- Paroled into US for at least one year
- Given conditional entry before 1980
- Asylee or Refugee, Cuban/Haitian
- Trafficking victim, including spouses, children, siblings, or parents
- Battered non-citizen, including spouses, children, or parents
- Veteran or active military
- Member of a federally recognized Indian tribe

Healthcare and Non-citizens

- Effective December 23, 2022, non-citizens can access health-related benefits without triggering harmful immigration consequences
- This includes:
 - refugees,
 - asylees,
 - noncitizens on temporary protected status (TPS)
 - special immigrant juveniles
 - T visa (trafficking victims) and U visa (crime victims)
 - petitioners of the Violence Against Women Act (VAWA).

Alphabet Soup

Some Laws You Will Encounter

- **HIPAA**: Health Insurance Portability and Accountability Act (1996).
- EMTALA: Emergency Medical Treatment and Labor Act (1986).
- COBRA: Consolidated Omnibus Reconciliation Act (2009).
- ERISA: Employment Retirement and Income Security Act (1974).
- PPACA: Patient Protection and Affordable Care Act (2010): ACA/Obamacare.

Medicaid

- A 2016 study concluded that an approximately 60% increased ability to afford care can be attributed to Medicaid expansion provisions enacted by PPACA.
- An analysis of mortality post-Medicaid expansion suggests that Medicaid saves lives at a more cost effective rate compared to other public policies which cost an average of \$7.6 million per life saved.

Medicaid Expansion

- In 2014, the 1st year of Medicaid expansion:
 - the annual mortality rate for low-income older adults in expansion states fell by about 9 deaths per 10K people,
 - for adults in non-expansion states, it increased each year to about 21 deaths per 10K people in the 4th year.
- Over 4 years, this amounts to 19,200 lives *saved* among older adults in expansion states, and about 15,600 lives *lost* among older adults in states without expansion.
- By 2017 the annual impact is more than 7,000 lives *saved* in expansion states and almost 6,000 lives *lost* in states with non-expansion.

Medicaid

- The Oregon Health Insurance Experiment, found a 25% increase in overall medical spending due to gaining Medicaid.
- A study estimated that the Medicaid expansion covered 239-316 adults to prevent one death per year.
- Thus, *each* death prevented leads to an estimated increase in health care spending of \$186 K to \$246 K, based on the number-needed-to-treat.

Questions? 1





BIG PHARMA and DIRECT to CONSUMER ADVERTISING (DTCA)

Direct to Consumer Advertising

(DTCA)

- A marketing strategy used by pharmaceutical companies to promote their prescription drugs directly to consumers as patients, instead of targeting doctors.
- The US and New Zealand are two countries in the world that allow DTCA of prescription drug products.
- These commercials are often seen on TV and feature a celebrity spokesperson discussing a particular drug or an actor playing the role of a very satisfied patient.

Direct to Consumer Advertising (DTCA)

- In 1997 the FDA eased restrictions to allow pharmaceutical companies to advertise directly to consumers.
- With restraints lifted, spending on prescription drug ads soared and is still rising.
- The FDA's goal is to assure prescription drug information is "truthful, balanced, and accurately communicated", a lofty aim not always realized.

Direct to Consumer Advertising

(DTCA)

- The FDA oversees the advertising for certain kinds of medical devices, such as hearing aids, the lasers used in LASIK procedures, and contact lenses.
- FDA regulates advertising only for prescription drugs.
- It requires:
 - that advertising be accurate
 - that it promote only drugs for approved conditions
 - that it state medication risks
 - that it show ways to get more information

Direct to Consumer Advertising

DTCA Types

- A *Product Claim* advertisement identifies the generic and trade names of the medication, contains claims about its benefits, and at least one approved indication.
- A *Reminder* advertisement builds brand recognition but cannot contain information or imagery that pertain to the approved uses.
- A *Help-seeking* advertisement is an awareness campaign for a medical condition, and is used as marketing for new drugs.

Direct to Consumer Advertising (DTCA)

- The information provided in these ads is often incomplete, biased, or confusing.
- The FDA does not review and approve all advertisements for drugs before their release .
- In 2021, the pharmaceutical industry in the US spent \$6.88 B dollars on DTCA .

DTCA Pro's

A chance to educate people about new conditions and treatments

Improve health by encouraging people to take medications they should be taking

Raise awareness of possible side effects

Lessen stigma surrounding certain conditions, such as mental illness or erectile dysfunction

Increase detection of undiagnosed diseases if patients are inspired by ads to see their doctors

30% of Americans say they talk to their doctor about a medicine they saw on TV

DTCA Cons

DTC ads may present incomplete or biased information

Spur people to ask for medications they don't need

Promote medications before long-term safety is known

A pain drug was pulled from the market due to serious complications after millions of people had seen the ad and began taking it

Create conflicts between patients asking for a drug and doctors who don't recommend it

Drive up healthcare costs without adding health benefits (cost is rarely mentioned in the ads).

Direct to Consumer Advertising

DTCA

- DTCA has had a positive impact on the degree to which people adhere to a treatment, but only among those who were already on medication before DTCA.
- Among this population, a 10% increase in exposure to drug advertising increases the rate of adherence between 1% and 2%.

Direct to Consumer Advertising

DTCA

- DTCA influences patients to ask for an advertised, name-brand or newly-introduced medication that may not have had enough post-marketing testing.
- DTCA has contributed to the frequency of requests to prescribe analgesic drugs, including opioids.
- As patient requests for a specific drug increase, physicians will increase prescribing more expensive, branded drugs, even when not warranted.

Direct to Consumer Advertising

DTCA

- Pharmaceutical companies create “disease mongering”, by promoting awareness of minor conditions to encourage the sale of treatments for them.
- Resources spent on advertising could otherwise be spent on research and development for new drugs and medical therapies.
- Pharmaceutical companies will advertise for their most profitable products, many of which are unnecessary “me-too” drugs.

Direct to Consumer Advertising

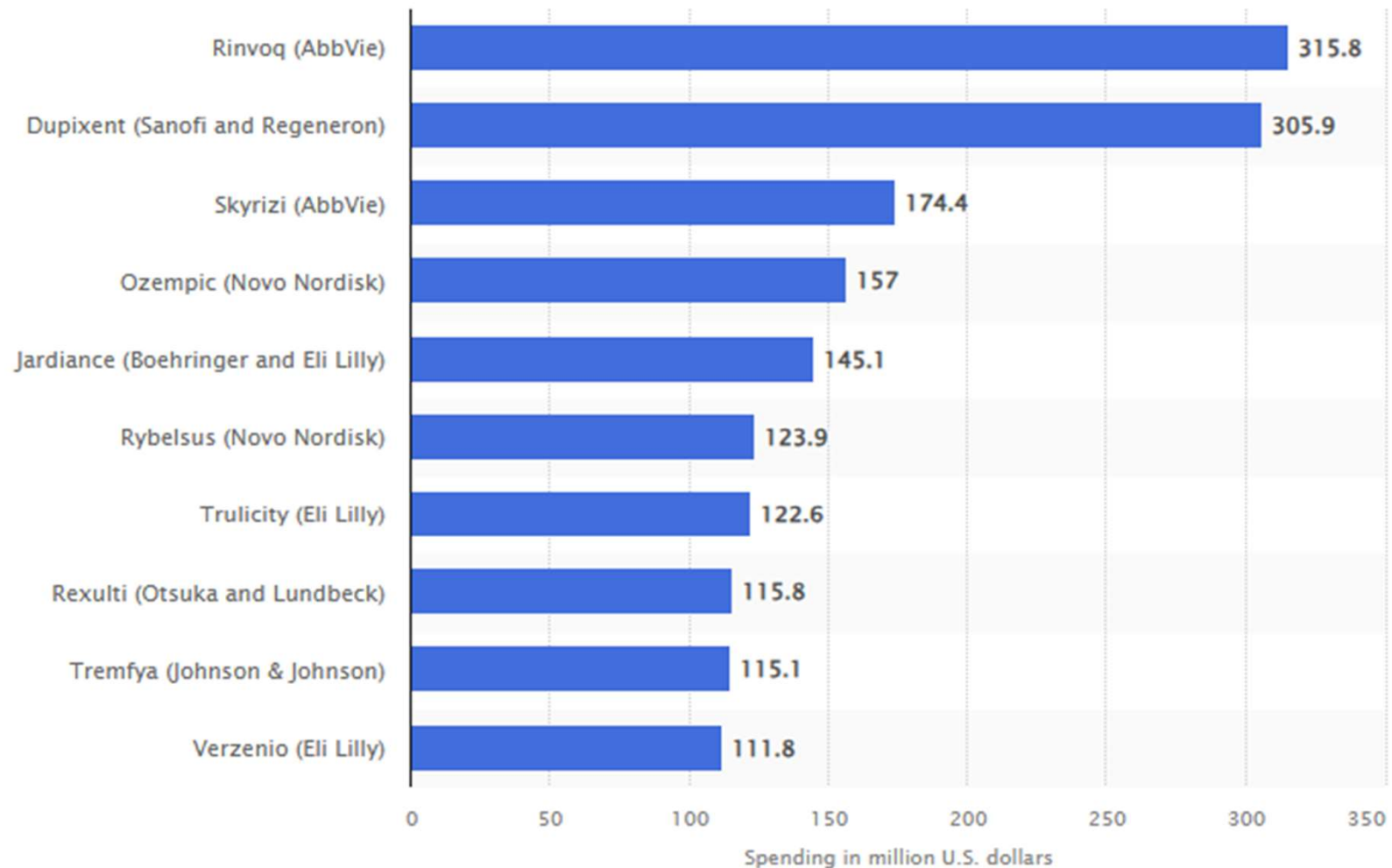
DTCA

The main purpose of DTCA is to sell a product, not educate consumers:

- "A leading treatment for this condition." (But what if there are only two or three drugs available for that condition?)
- "No other treatment has been proven better." (The advertised drug is great, yet it might be only as good as older, less expensive, competitors.)
- "In clinical studies, this medication proved more effective than standard treatment." (So, how good is standard treatment?)
- "For some, 1 pill is all you need for 24-hour relief." (How many is "some"? What is relief?)

Leading Pharmaceutical TV Advertising Spending in 2022

(in million U.S. dollars)



Statista 2023

Pharma Revenues 2021 & 2022

(Data from Fierce Pharma)

Company	2021 *	2022 *	Spending Rank
Pfizer	\$81.29	\$100.33	Not ranked
Johnson & Johnson	\$93.77	\$94.94	9 th
Roche	\$68.71	\$66.26	Not ranked
Merck & Co.	\$48.70	\$59.28	Not ranked
Abbvie	\$56.20	\$58.05	1 st
Novartis	\$51.63	\$50.54	Not ranked
Bristol Myers Squibb	\$46.38	\$46.16	Not ranked
Sanofi	\$44.63	\$45.22	2 nd
Astra Zeneca	\$37.42	\$44.35	Not ranked
Glaxo Smith Kline (GSK)	\$46.92	\$36.15	Not ranked

* In Billions of Dollars \$US

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Jardiance Commercial (2023)

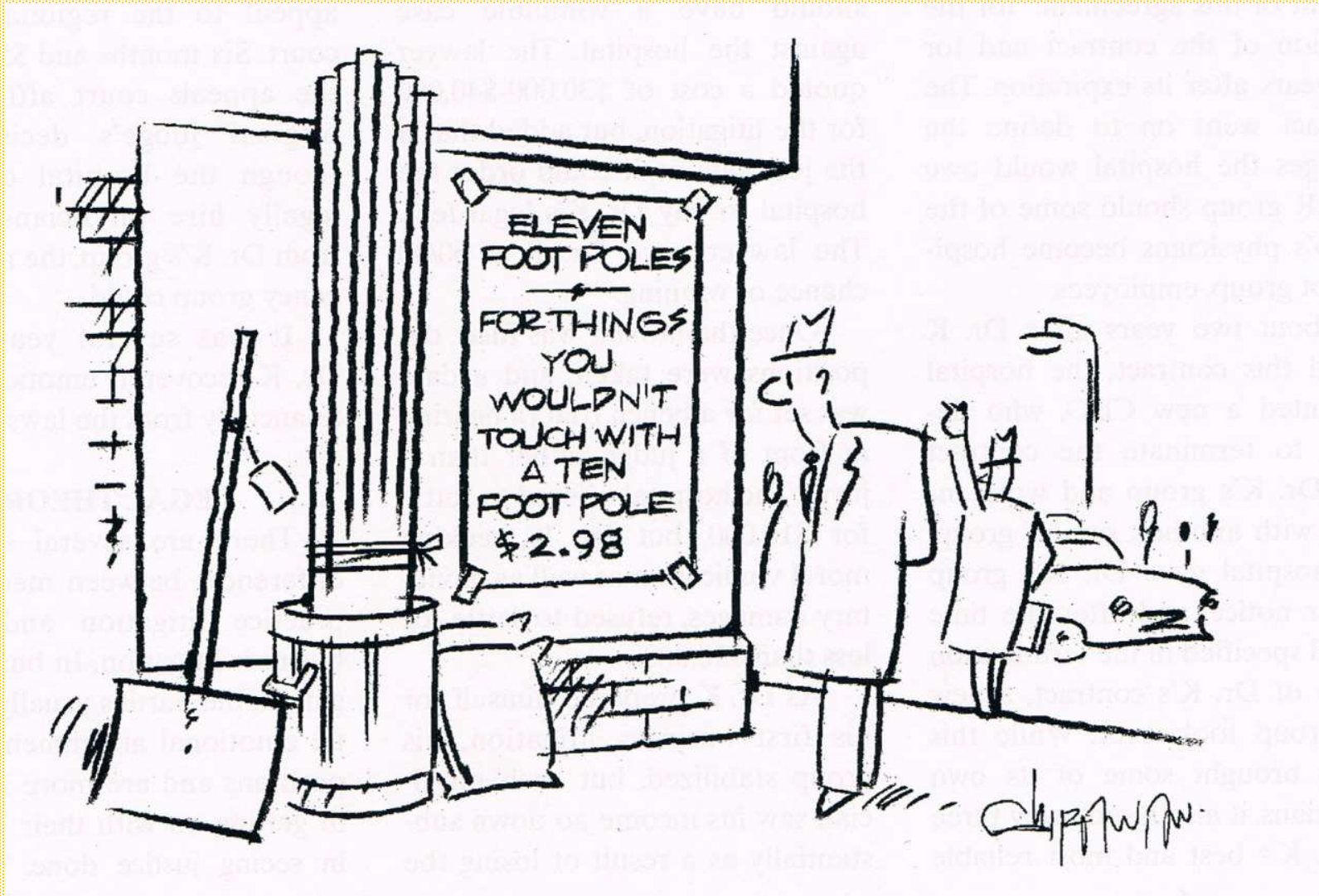
Share

PRESCRIPTION
Jardiance
(empagliflozin) tablets
10 mg/25 mg

JARDIANCE is used to lower blood sugar along with diet and exercise in adults with type 2 diabetes.

US HEALTHCARE COST

Eleven-Foot Poles !!!



US Healthcare Cost

- Insured Americans spend more out of pocket for healthcare than people in other wealthy nations, and some resort to purchasing their medications from other countries.
- Our current healthcare system is not sustainable, but it may be wonderfully profitable to insurers, Pharma companies, and to some providers who are rewarded handsomely by it.
- Other countries approach healthcare differently, like single-payer, government-run systems, or a mix of private and public options.

US Healthcare Cost

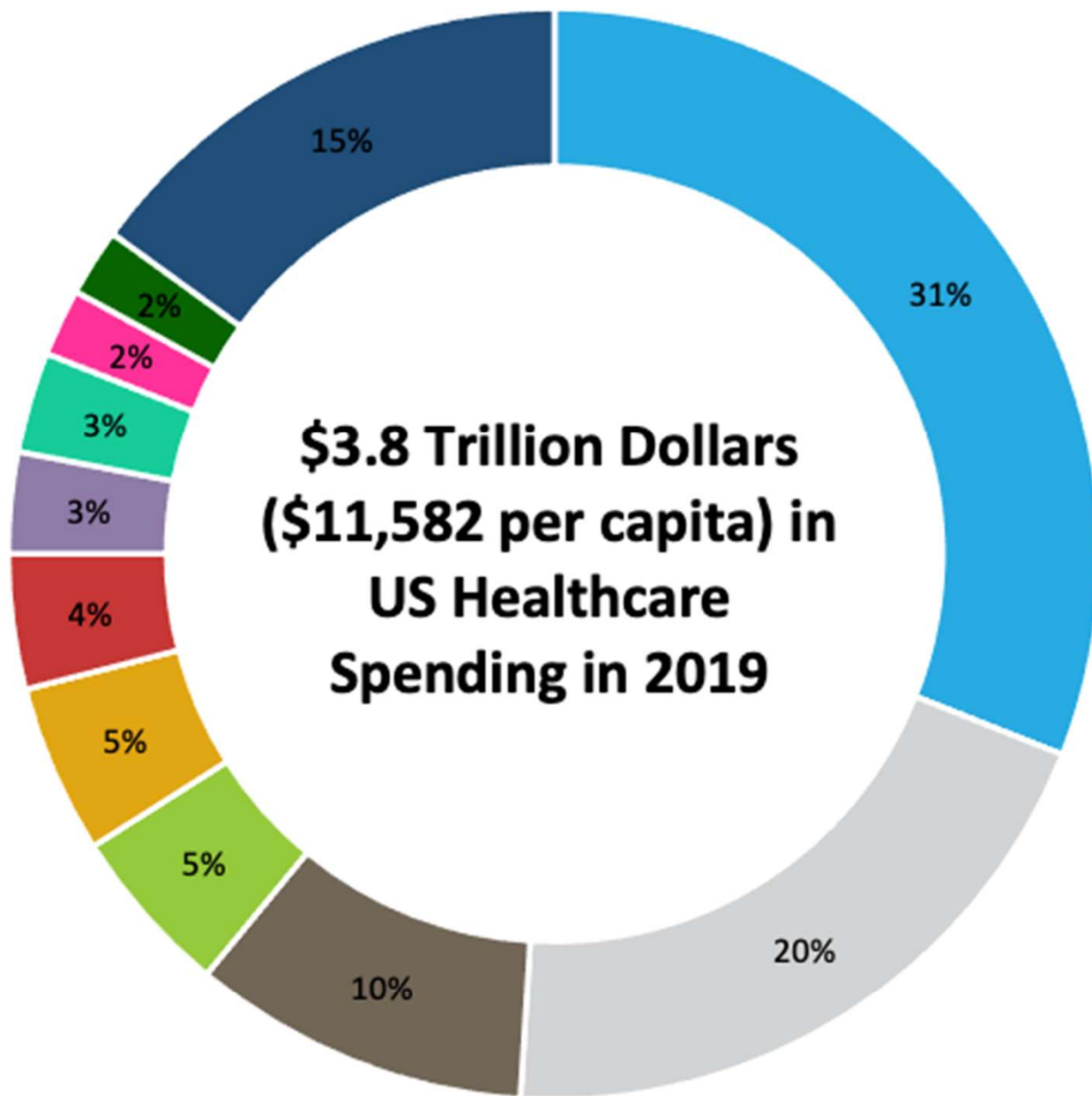
- We have the highest cost, not the highest quality, and we are relatively dissatisfied with our healthcare system.
- We spend far more on healthcare than other high-income nations, but score very poorly on key health measures like:
 - life expectancy
 - preventable hospital admissions
 - suicide
 - maternal mortality
- People risk bankruptcy if they develop a serious illness.

US Healthcare Cost

- Our country spends trillions on disjointed, poorly coordinated care, especially for older Americans.
- If physicians, consumers and caregivers talked with each other and shared information, results and outcomes would significantly improve.
- We waste time putting people through unpleasant hospital stays, weakening them further and spending money that could be used in a much better way.

US Healthcare Cost

- It's almost impossible to compare the quality or cost of healthcare options or even to know how big a bill to expect.
- Planning ahead and staying with doctors in your network, still may not prevent you from getting a surprise bill.
- A patient had knee surgery, the hospital and surgeon were in his network, but the anesthesiologist was not.
- **BANG!!** Surprise bill.



- Hospital Care
- Physician and Clinical Services
- Retail Prescription Drugs
- Other Health, Residential, and Personal Care Services
- Nursing Care Facilities and Continuing Care Retirement Communities
- Dental Services
- Home Health Care
- Other Professional Services
- Non-Durable Medical Products
- Durable Medical Equipment
- Other Miscellaneous spending

US Healthcare Expenditures

- Expenditures surpassed \$2.3 T in 2008,
 - more than 3X the \$714 B spent in 1990
 - over 8X the \$253 B spent in 1980
- In 2022, the US spent \$3.69 T (17.9% of GDP), or \$12,728 per person, compared to \$4,571 per person in the UK.
- Major categories included
 - 32% on hospital care
 - 20% on physician and clinical services
 - 10% on prescription drugs

US Healthcare Expenditures

Some Ways to Decrease

Investment in information technology

Improve quality & efficiency

Encouraging evidence-based medicine (EBM)

Reducing unnecessary variations in care

Adjusting provider compensation

Government regulation

Encouraging prevention

Increasing consumer involvement in purchasing

Health Insurance

- During and after World War II, healthcare tied to employment was offered as a way to attract workers.
- Nowadays, a layoff can jeopardize access to healthcare.
- Current US healthcare system tends to delay or deny high-quality care to those who are most in need of it but can least afford its high cost.
- This causes avoidable healthcare disparities for people of color and other disadvantaged groups.

Insurance Red Tape

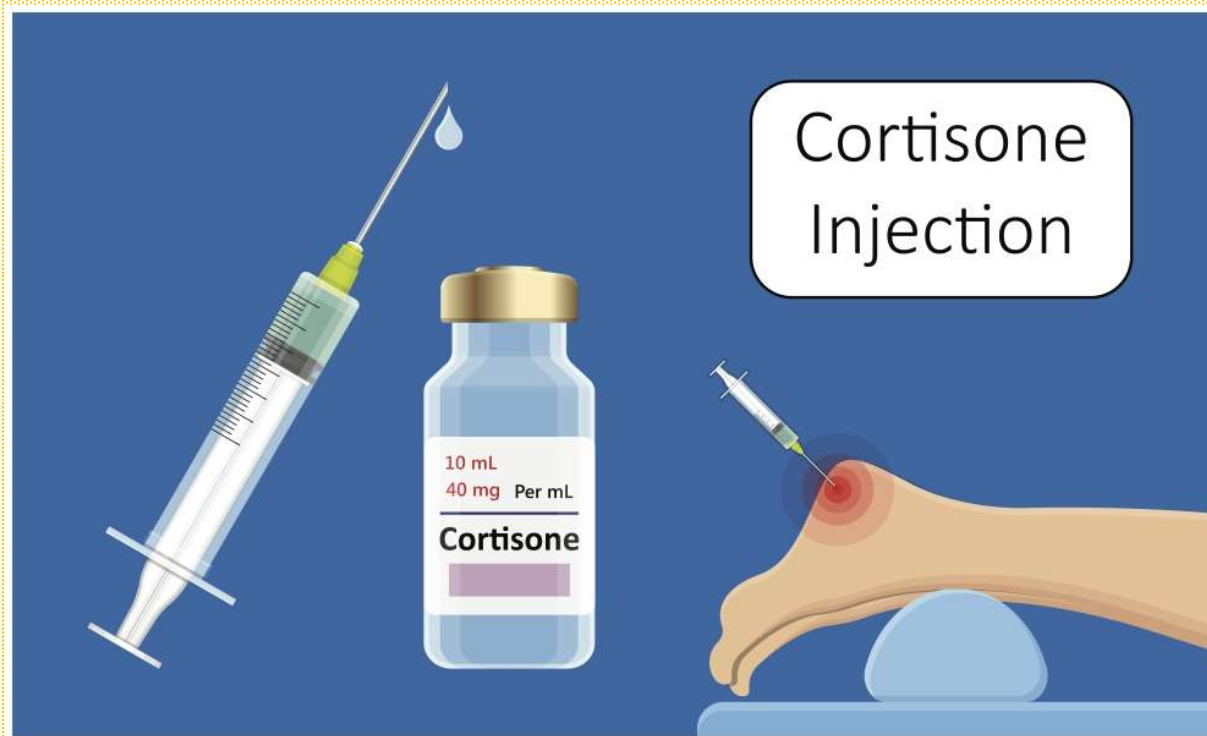
- Companies restrict expensive medications, tests, and other services by declining coverage until getting paperwork that justifies the service.
- This prevents unnecessary expense to the insurance company, but it also discourages care that was deemed appropriate by your physician.
- In a survey, 78% of physicians reported that this led people to abandon their recommended treatments, and 92% thought it contributed to delays in care.

Insurance Red Tape

- These type of decisions are shortsighted.
- When an expensive medication is prescribed for Rheumatoid arthritis, coverage is denied, and a cheaper medication is substituted, even if less effective.
- The expensive medication could prevent future joint replacements that may be more costly to insurers and add to patients' suffering.

Penny Wise & Pound Foolish

A steroid ankle injection for tendinitis (\$350 to \$1,000) is covered by insurance, but a shoe insert (\$35 to \$75) that might work just as well may not be.



Step Therapy

(Fail First)

- An insurance company requires a patient to try a cheaper or “preferred” drug before approving a more expensive or non-preferred drug (frequent with anticancer meds).
- It is a type of prior authorization requirement that is supposedly intended to control the costs and risks posed by prescription drugs.
- The practice begins medication for a medical condition with the most cost-effective drug therapy and progresses to other more costly or risky therapies only if necessary.

Step Therapy

Step therapy is not illegal, but some states have passed laws to regulate it and protect patients' rights by requiring insurance companies:

- to show clear and reasonable criteria for step therapy
- to provide exceptions/overrides for certain diagnoses
- to disclose therapy policies to patients and providers
- to process appeals quickly and fairly

WORKFORCE PROBLEMS

Staffing Issues

- Hospitals are losing millions (?Billions) of dollars per year.
- Lack of staff makes hospitals close urgent care centers, obstetric, pediatric and other services to try to survive.
- Post-pandemic hospital staffing has massively decreased, while dependency on temporary locum tenens staffing has increased.

Locum Tenens

- Locum providers may receive 2X to 3X the hourly pay rate, and often, free housing, rental cars and meal allowances.
- Often, a person who worked through the pandemic now has to train an individual who will make many times their pay, gets additional perks, but has no institutional loyalty.
- In some areas of the country locum workers may be from the hospital down the street: employees from hospital A go to hospital B then hospital C without having to travel.

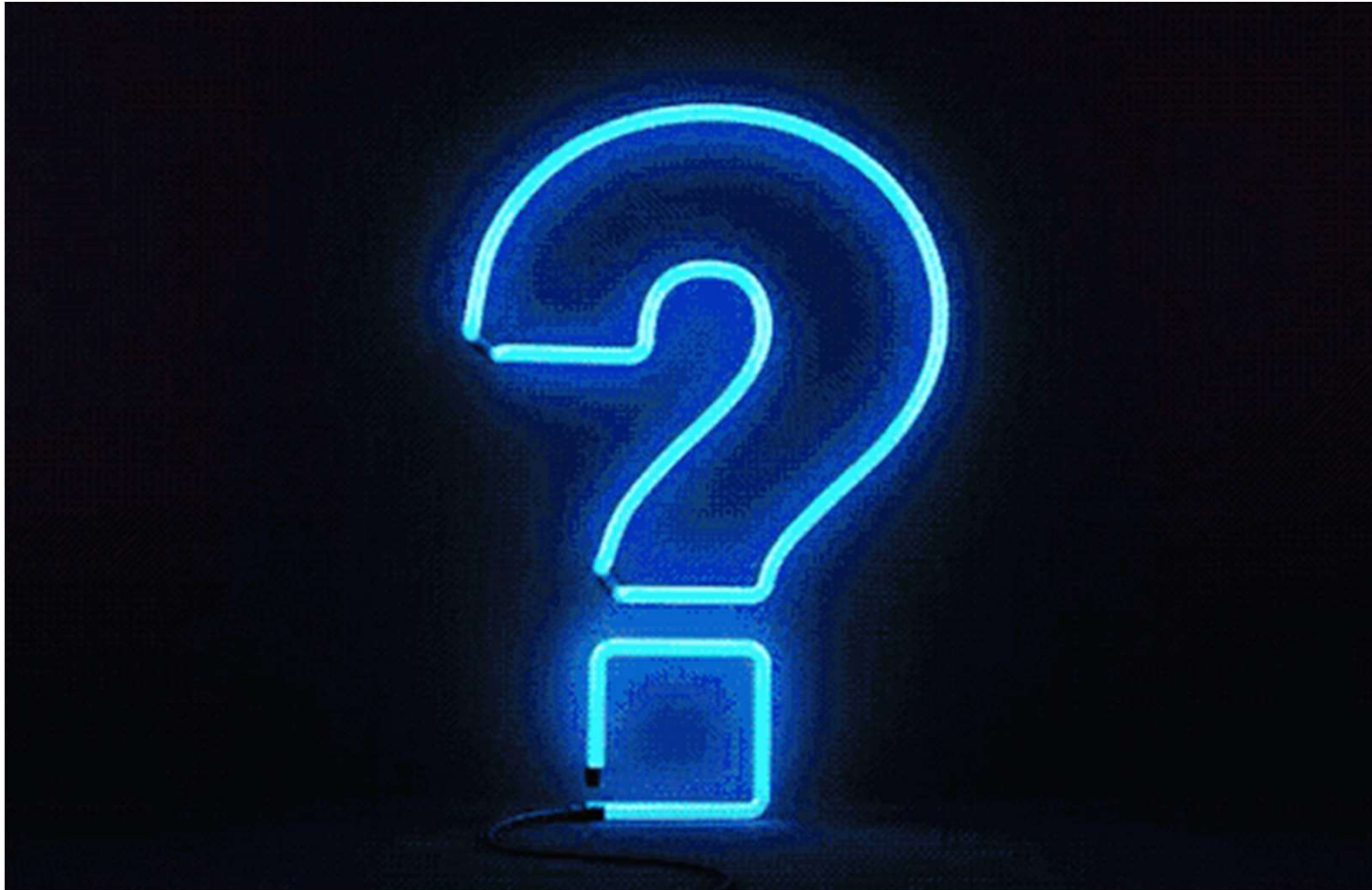
Staffing Issues

- Hospitals no longer have a stable regular staff that can build relationships between professionals and patients.
- Locum tenens providers with short-term contracts are working at all levels of the professional ladder:
 - physicians
 - mid-level providers (APNs and PAs)
 - nurses
 - respiratory therapists
 - radiology technologists
 - EMTs/Paramedics

Staffing Issues

- Employment of workers in ambulatory healthcare settings decreased sharply at the beginning of COVID-19, but has gradually recovered.
- The number of “employed and at work” healthcare workers in hospitals decreased since January 2020, by 2% and in nursing and residential care settings 12%.
- Almost 63% of counties in the United States have been designated as primary care professional shortage areas.

Questions? 2





AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



2022 National Healthcare Quality and Disparities Report (NHQDR)

National Healthcare Quality & Disparities Reports (NHQDR)

- For over 20 years, the Agency for Healthcare Research and Quality (AHRQ) has been reporting on opportunities for improving healthcare quality and reducing disparities.
- The 2022 NHQDR tracks about 550 measures that cover a wide variety of conditions and settings.

2022 NHQDR

Reports information on disparities and changes in federal initiatives to improve quality and reduce inequalities.

Basic Concepts

Access to care

Quality of care

Disparities in care

Priority areas

Patient safety

Person-centered care

Care coordination

Effective treatment

Healthy living

Affordable care

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US Healthcare

- Life expectancy in the United States decreased for the first time in 2020 due to COVID-19.
- The leading causes of death in the United States in 2020 were heart disease and cancer, followed by COVID-19 and unintentional injuries.
- The leading cause of years of potential life lost (YPLL), an important cause of death that disproportionately affects younger populations, was unintentional injury.

Maternal Health

- US has worse maternal healthcare than other industrialized nations, causing suboptimal maternal health outcomes with considerable racial disparities.
- The overall maternal mortality rate in 2020 was 24 deaths per 100K live births, an increase from 2019 (20) and 2018 (17) deaths per 100K live births.
- The severe maternal morbidity rate increased 11.1% between 2016 (7 events per 1K deliveries) and 2019 (8 events per 1K deliveries).

Mental Health

Child and Adolescent

- In 2021, a national emergency for children's mental health was declared by pediatric health organizations.
- The U.S. Surgeon General released an advisory on mental health among youths.
- During March–October 2020, compared with 2019, the proportion of mental health-related ER visits increased by **24%** among U.S. children aged 5–11 years and **31%** among adolescents aged 12–17 years.

Mental Health

Child and Adolescent

- For children ages 0-17 years between 2016 and 2018, rates of ER visits with principal mental health diagnosis per 100K population increased by 24.6%.
- Death from suicide among teens 12-17 increased by **70.3%** between 2008 and 2020 (from 3.7 to 6.3 deaths per 100K).
- In 2020, only 42 % of teens 12-17 with a major depressive episode in the last 12 months received any treatment.

9 Mental Health Conditions

Child and Adolescent MHCs

- depression
- anxiety
- disruptive behavioral & impulse-control disorders
- tic disorders
- obsessive-compulsive disorders
- trauma and stressor-related disorders
- eating disorders
- attention-deficit/hyperactivity disorder
- bipolar disorders

Mental Health

Child and Adolescent

Compared with 2019, among adolescent females aged 12–17 years, ED weekly visits increased for:

- 2 OF 9 MHCs during 2020 (eating disorders and tic disorders)
- 4 of 9 MHCs during 2021 (depression, OCD, eating disorders, and tic disorders)
- 5 of 9 MHCs during January 2022 (anxiety, eating disorders, trauma & stressor-related disorders, tic disorders, and OCD)
- overall MHC visits during January 2022

Opioids

- Overall rates of overdose deaths involving *any* opioid increased by **36.8%** between 2019 and 2020: 15.2 to 20.8 deaths per 100K population in a single year.
- Deaths related to opioids increased in all racial and ethnic groups and in all urban and rural locations, although disparities among groups exist.
- Only 9.9% of people ≥ 12 who needed treatment for illicit drug use at a specialty facility in 2020 received it.

VALUE of a STATISTICAL LIFE (VSL) and QUALITY-ADJUSTED LIFE YEAR (QALY)

Value of a Statistical Life

- Estimates on the value of a statistical life (VSL) used by the government have been pegged at a mean of \$7.6 M, with a range from \$950K to \$21.4 M, in 2007 inflation-adjusted dollars.
- This range (\$950K to \$21.4 M) , combined with the set of values for estimated NNT produces a cost per life saved ranging from \$327K to \$867K in 2007 dollars.

Number Needed to Treat (NNT)

Average number of patients who need to be treated to prevent one additional bad outcome, compared with a control.

It's the difference between the incidence in the treated (exposed) group and the incidence in the control (unexposed) group.

The ideal NNT is **1**, where everyone improves with treatment and no one improves with control: a **higher** NNT indicates a less effective treatment.

* Health insurers may deny drugs with a high NNT, and this is significant when comparing possible side effects of a medication against its benefits. *

For medications with a high NNT, even a small incidence of adverse effects may outweigh the benefits.

Value of a Statistical Life

(VSL)

- VSL quantifies the benefit of avoiding a death and compares the life-saving and risk-reduction benefits of new policies, regulations, and projects using cost-benefit analysis.
- In Western countries estimates for the VSL range from US \$1 M to US \$10 M, while the US Federal Emergency Management Agency (FEMA) estimates the VSL at US \$7.5 M in 2020.

VSL for Dialysis

- A Stanford team calculated the cost-effectiveness of kidney dialysis and the value of a statistical life (VSL).
- They found that the VSL applied to costs of dialysis in 2009 averages about US\$129 K per QALY.
- The QALY is a relation of the value of health outcomes to the people who benefit from them (cost-benefit analysis).
- Combines length of time that life is extended and the quality of that life into a single number comparable across different treatments.

Quality-Adjusted Life Year (QALY)

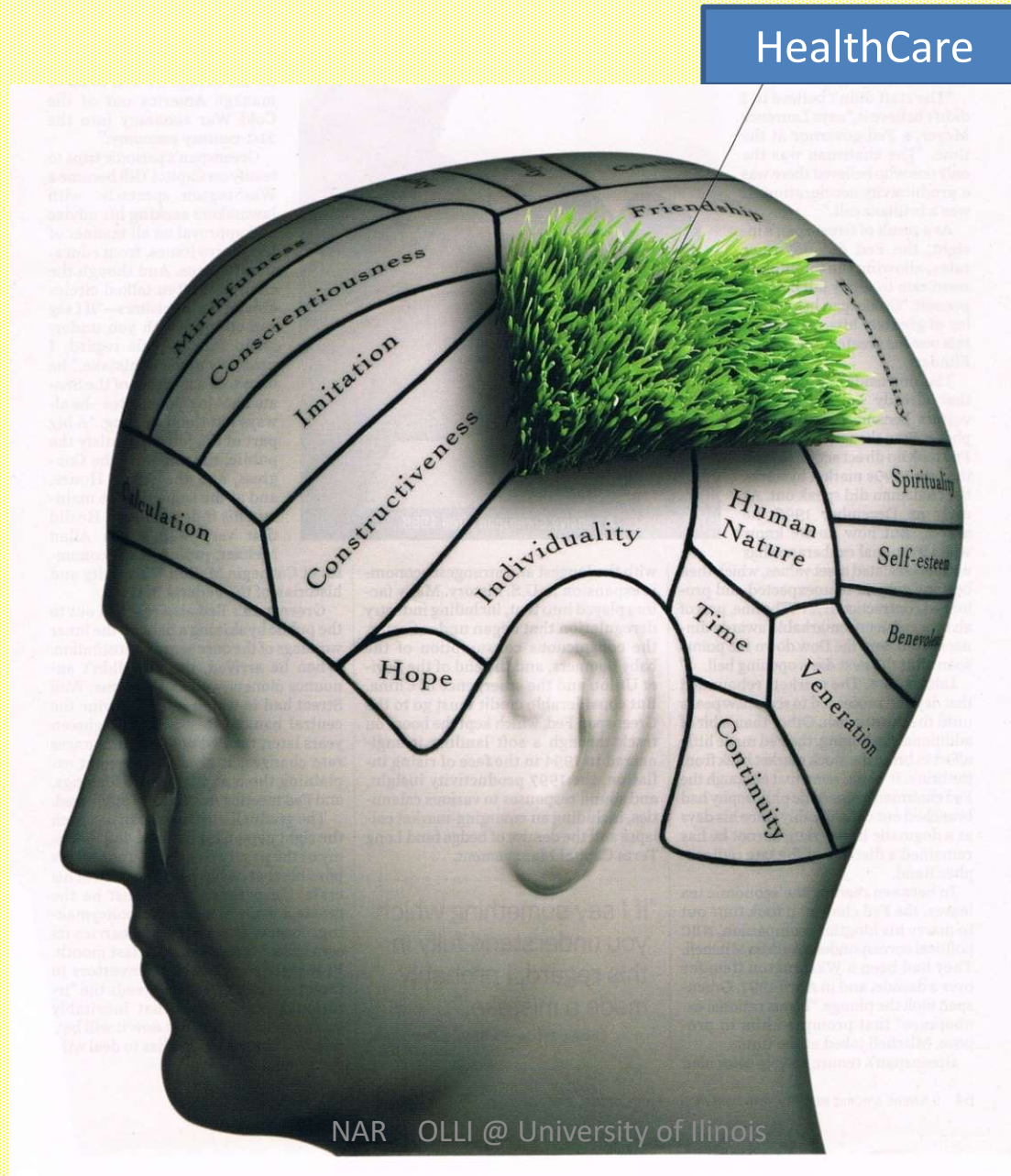
- A Stanford team calculated the cost-effectiveness of kidney dialysis and the value of a statistical life (VSL).
- They found that the VSL applied to costs of dialysis in 2009 averages about US\$129 K per QALY (cost-effectiveness threshold).

Quality-Adjusted Life Year (QUALY)

- That means that if **Medicare** paid an additional \$129,000 to treat a group of patients, on average, group members would get 1 more quality-adjusted life year in perfect health [QUALY], or about 2 years of life on dialysis (\$64,500 per year).
- This is the maximum amount Medicare is willing to pay for one additional QUALY.

US HEALTHCARE CRITICAL SUMMARY

I will Nurture Your US HealthCare Brain Lobe



Followership

US Healthcare

- Focuses on disease, specialty care, and technology rather than preventive care.
- Physicians receive very little instruction in primary care, nutrition, exercise, and mental health.
- Doctors in specialties with extensive technology have far higher incomes than those in primary care.

10 Problems with US Healthcare

Highest cost, not highest quality

Great financial burden to users

Health Insurance tied to employment

Healthcare inequities and disparities

Insurers discourage care to hold down costs

Emphasizes technology and specialty care

Overuses procedures and drugs

Stifles innovation

Care is Fragmented

Defensive (CYA) medicine

US Healthcare

- Payment structures for private or government health insurance can prevent innovative healthcare delivery.
- Home-based treatments (geriatric, cancer), may be cost-effective and preferred by patients, but payment systems don't routinely cover them, so these innovations may never become widespread.
- Telehealth was relatively rare before the pandemic, partly due to lack of insurance coverage, but it has flourished and demonstrated its effectiveness.

Defensive Medicine

(CYA)

- Medical care mainly used to minimize the chance of lawsuits, it drives up costs, provides little or no benefit, and may even reduce the quality of care.
- Malpractice lawsuits are so common in the US that for doctors in certain specialties, it's not a matter of if but when they will be sued.
- The impact of defensive medicine is not small, though it is hard to measure.

Fragmented Care in US

- People get care in many unconnected settings which can lead to duplication, poor coordination of services, and higher costs.
- A doctor may prescribe a medicine that conflicts with a medicine prescribed years earlier by another doctor and which may be continued indefinitely because the new doctor doesn't know why it was started.
- Doctors often repeat tests performed elsewhere because results may not be readily available, or, even if they were, they might be considered “unreliable”.

US Healthcare

- Reform of our healthcare system may not happen anytime soon, due to competing interests with well-funded lobbying groups ready to do battle.
- The question going forward is whether there will be the trust, will, and vision necessary to build something better.
- It won't be easy, but complaining while waiting for the system to implode, is unacceptable.

US Healthcare

(Competition)

- The strength and weakness of our current healthcare system, is that it is market-based.
- Multiple providers compete against each other, which may lead to innovation but not to the much needed decrease in cost.
- A market-based competitive system makes it difficult for providers to work together, and causes a serious lack of coordination of care.

Population Growth

- The US population is growing and healthcare systems and providers need to increase to be able to serve it.
- Between the 2010 and the 2020 Census, U.S. population increased 7.4% to 331,449,281 people, about (50.5% females, 49.5% males).
- The U.S. population is aging:
 - Estimates from the ACS show the median age increased from 36.9 years to 38.2 years between 2010 and 2020.
 - Fewer babies are born & oldest adults are living longer

US Healthcare

- Is the US healthcare system expensive, complicated, dysfunctional, or broken?
- The simple answer is YES to all.
- An entire industry has evolved in the US just to help people navigate the insanely complex task of choosing a health insurance plan.

US Healthcare

- Beyond the outrageous cost of this care is its wildly varying quality.
- Healthcare in this country delivers too few miracles and far too much emotional and financial stress.
- It often seems as if no one is driving the bus, or that those at the wheel are totally out of control

US Healthcare

- Healthcare is killing the economy, and in too many cases, killing us too.
- The system is bloated, wasteful, it's bad for patients, bad for doctors, bad for business and sometimes even dangerous.
- Rising costs claim too much of most Americans' income, and for most American companies, they are eroding their bottom line.

- “As the spending on health care continues to rise unabated (right now it is growing at twice the rate of inflation and accounting for 1 out of every 6 dollars we earn), we as a society will soon come to a point where compromises are inevitable: Either we cut back other forms of spending to make room, or we spend our health care dollars more wisely.”

(Chris P. Lee 2008)

Final Questions?



THANK
YOU

Session 6: Science and Technology

October 12, 2023

- Advances in Laboratory tests
- Diagnostic Imaging
- Invasive procedures
- Microinvasive surgeries
- Scientific research
- Surrogate Endpoints
- Medical Reversal