

# Health(care) Economics

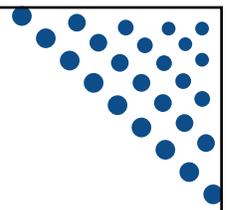
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February 23, 2022

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State University of New York



## National Economic Education Delegation



### • Vision

- One day, the public discussion of policy issues will be grounded in an accurate perception of the underlying economic principles and data.

### • Mission

- NEED unites the skills and knowledge of a vast network of professional economists to promote understanding of the economics of policy issues in the United States.

### • NEED Presentations

- Are **nonpartisan** and intended to reflect the consensus of the economics profession.



## Who Are We?

- **Honorary Board: 54 members**

- 2 Fed Chairs: Janet Yellen, Ben Bernanke
- 6 Chairs Council of Economic Advisers
  - o Furman (D), Rosen (R), Bernanke (R), Yellen (D), Tyson (D), Goolsbee (D)
- 3 Nobel Prize Winners
  - o Akerlof, Smith, Maskin

- **Delegates: 600+ members**

- At all levels of academia and some in government service
- All have a Ph.D. in economics
- Crowdsource slide decks
- Give presentations

- **Global Partners: 44 Ph.D. Economists**

- Aid in slide deck development

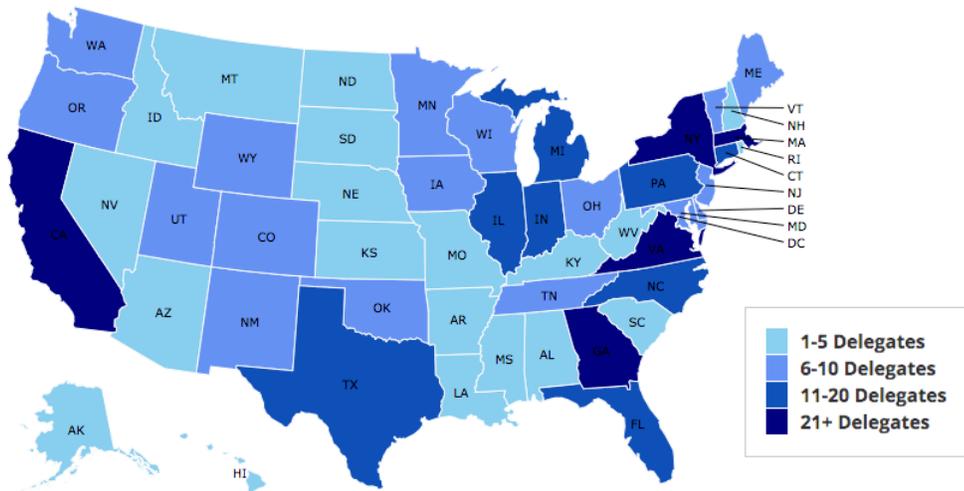


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## Where Are We?



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## Credits and Disclaimer

- **This slide deck was authored by:**
  - Veronika Dolar, SUNY Old Westbury
  - Jon Haveman, NEED
- **Disclaimer**
  - NEED presentations are designed to be nonpartisan.
  - It is, however, inevitable that the presenter will be asked for and will provide their own views.
  - Such views are those of the presenter and not necessarily those of the National Economic Education Delegation (NEED).



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## Outline

- What is Health(care) Economics?
- Taking the Pulse of the Health Economy
- Health Care Systems and Institutions
- Health Insurance and Reform
- Pharmaceuticals – Big Pharma



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## What is Health(care) Economics?

- Health Economics is a field of **MICRO**economics that focuses on the health care industry.
- Examples of other subfields of microeconomics include:
  - labor economics, industrial organization, economics of education, public economics, and urban economics.



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## Health Economics is part of Microeconomics

- Although health economics is part of “micro-” economics, it is actually very big:
  - In 2019, U.S. national health expenditure were **17.7% of GDP**, which is equivalent to around **\$3.8 billion**.
- For comparison, GDP in each country in 2019:
  - Germany: \$3,845 billion (4<sup>th</sup> largest economy)
  - UK: \$2,827 billion (6<sup>th</sup> largest economy)
  - France : \$2,715 billion (7<sup>th</sup> largest economy)



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## What is Health Economics?

- Health economics studies health care resource markets and health insurance.
- Healthcare is the biggest industry and the largest employer in the US.



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## What is a Market?

- A **market** is a group of buyers and sellers of a particular product in the area or region under consideration. The area may be the earth, or countries, regions, states, or cities.
- The concept of a market is any structure that allows buyers and sellers to exchange any type of goods, services, and information.
- Markets can be physical and non-physical.
- There are **many different types of markets** and depending on the type, different rules should be set up for achieve the best results for **society**.



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# Markets Studied in Health Economics

- **Markets for:**

- Physicians
- Nurses
- Hospital facilities
- Nursing homes
- Pharmaceuticals
- Medical supplies (such as diagnostic and therapeutic equipment)
- **Health Insurance**



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# Markets Matter for Costs, Access, and Quality



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## Market Economies

- In market economies, prices adjust to balance supply and demand.
- These equilibrium prices are the signals that guide economic decisions and thereby allocate scarce resources.
- The invisible hand works through the price system:
  - The interaction of buyers and sellers determines prices.
  - Each price reflects the good's value to buyers and the cost of producing the good.
  - Prices guide self-interested households and firms to make decisions that, in many cases, maximize society's economic well-being.



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## When does “free market does it better” hold?

**Two very important assumptions in order for this to hold are:**

1. Perfectly Competitive Market
2. No Market Failure

### What is a Perfectly Competitive Market?

- Many (numerous) buyers – price takers
- Many (numerous) sellers – price takers
- Identical (homogeneous) product
- Free entry and exit
- Both buyers and sellers have perfect information about the price, utility, quality, and production methods of products.

### What is Market Failure?

Market Failure is a situation in which the allocation of goods and services by a free market is not efficient, often it leads to a net social welfare loss.

Examples of Market Failure:

- Externalities
- Public Goods
- Asymmetric Information



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# What types of markets are there?

More Competition ← | → Less Competition

Perfect Competition | Monopolistic Competition | Oligopoly | Duopoly | Monopoly Monopsony

← Less Concentration | More Concentration →

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# Health Care Markets are Different

```

    graph TD
      Sponsor([Sponsor]) -- Premiums --> Insurer[Insurer or third-party payers]
      Insurer -- "Premiums (individual policies)" --> Consumers[Consumers/Patients]
      Insurer -- "Insurance Coverage" --> Consumers
      Consumers -- "Taxes or Lower Wages" --> Sponsor
      Consumers -- "Out-of-pocket fees" --> Producers[Producers/Health Care Providers]
      Producers -- "Services" --> Consumers
      Producers -- "Price" --> Consumers
      Insurer -- "Money (fixed or variable payments)" --> Producers
      Producers -- "Claims" --> Insurer
  
```

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## Are Health Care Markets Special?

- Market Structure
- Type of products and services
- Principal-Agent Problem
- Asymmetric Information
- Moral Hazard
- Self Interest



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## Pulse of the Health Economy

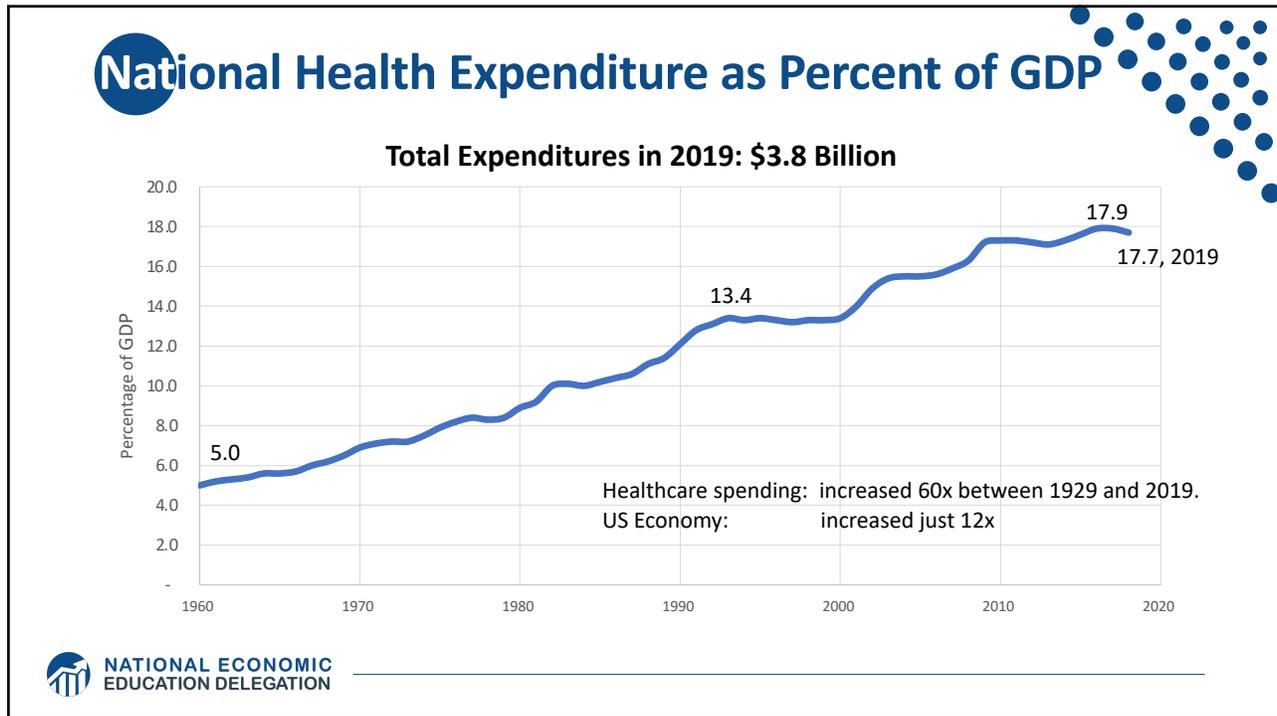


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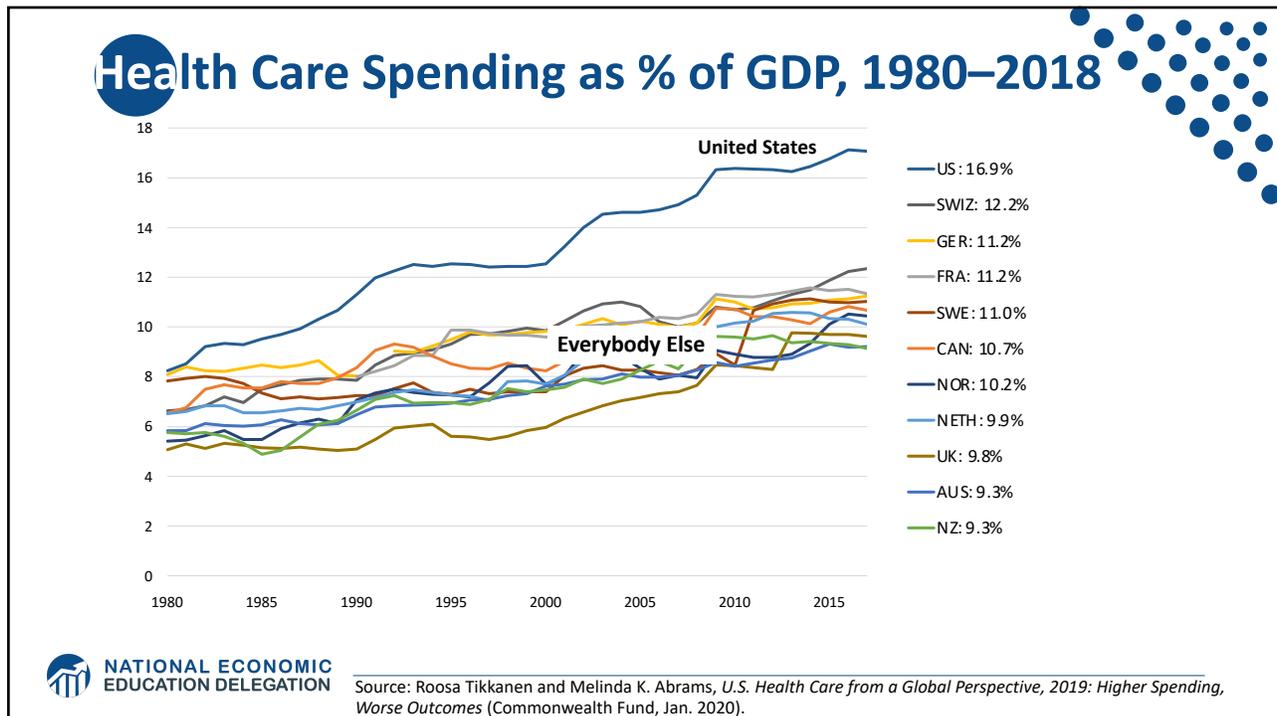
# Pulse of the Health Economy

- **Health economy involves activities related to population health:**
  - Production and consumption of goods and services.
  - Distribution of those goods to consumers.
- **Performance indicators of medical care:**
  - Cost
  - Access
  - Quality

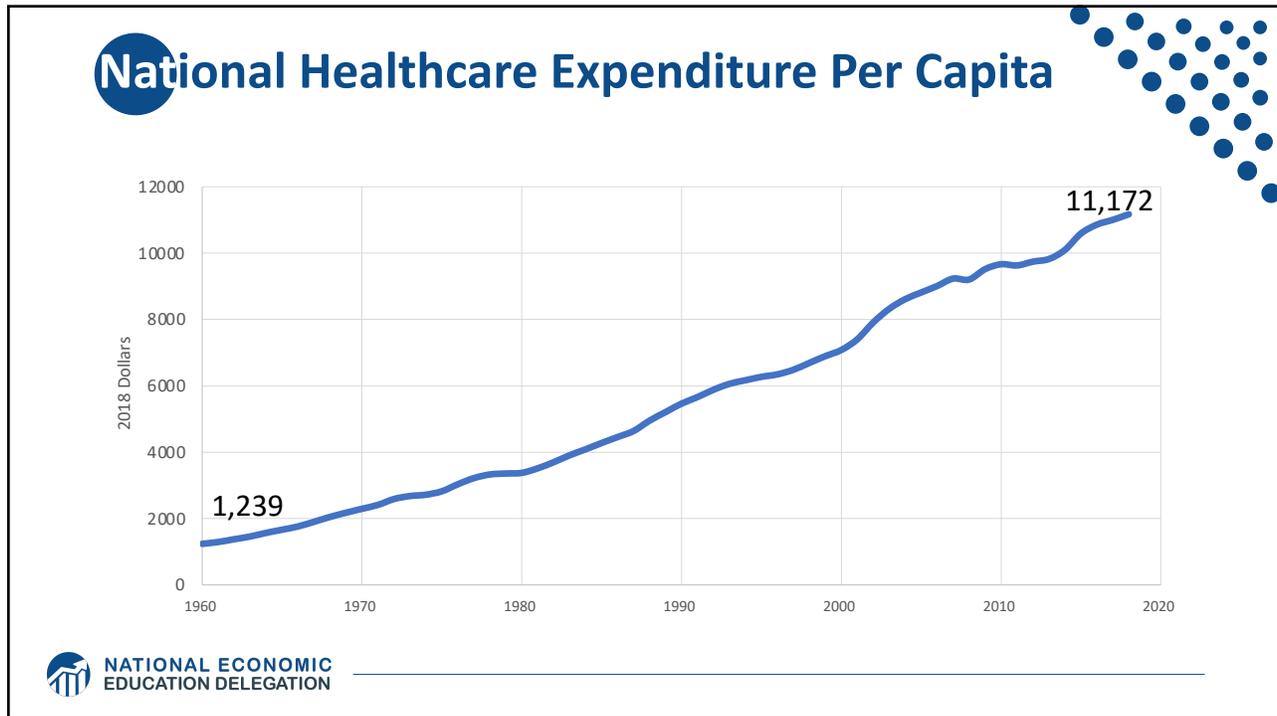
# Costs



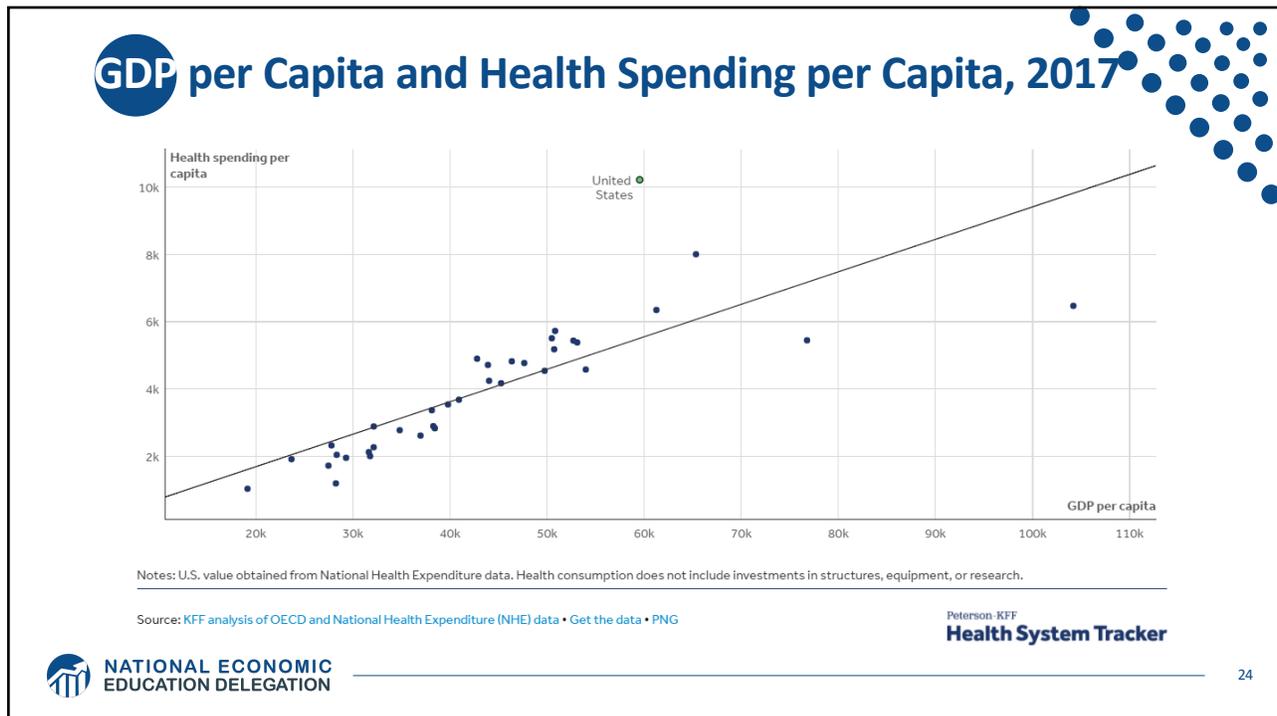
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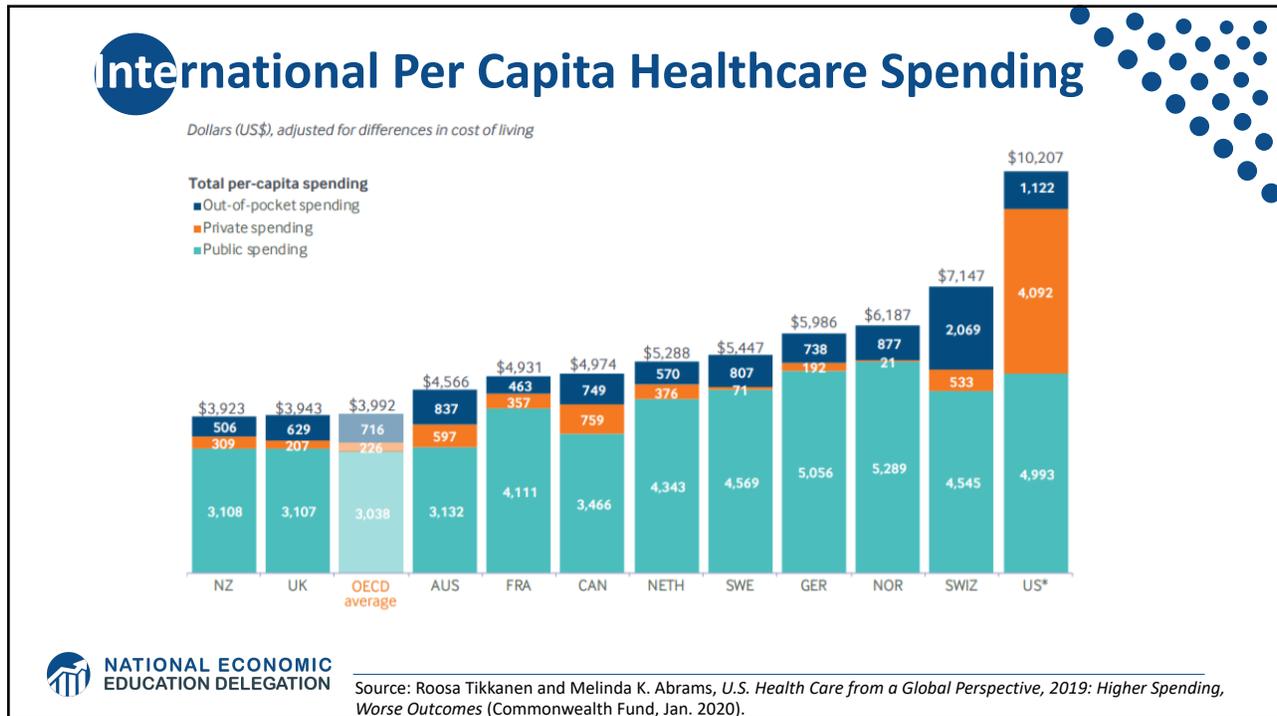
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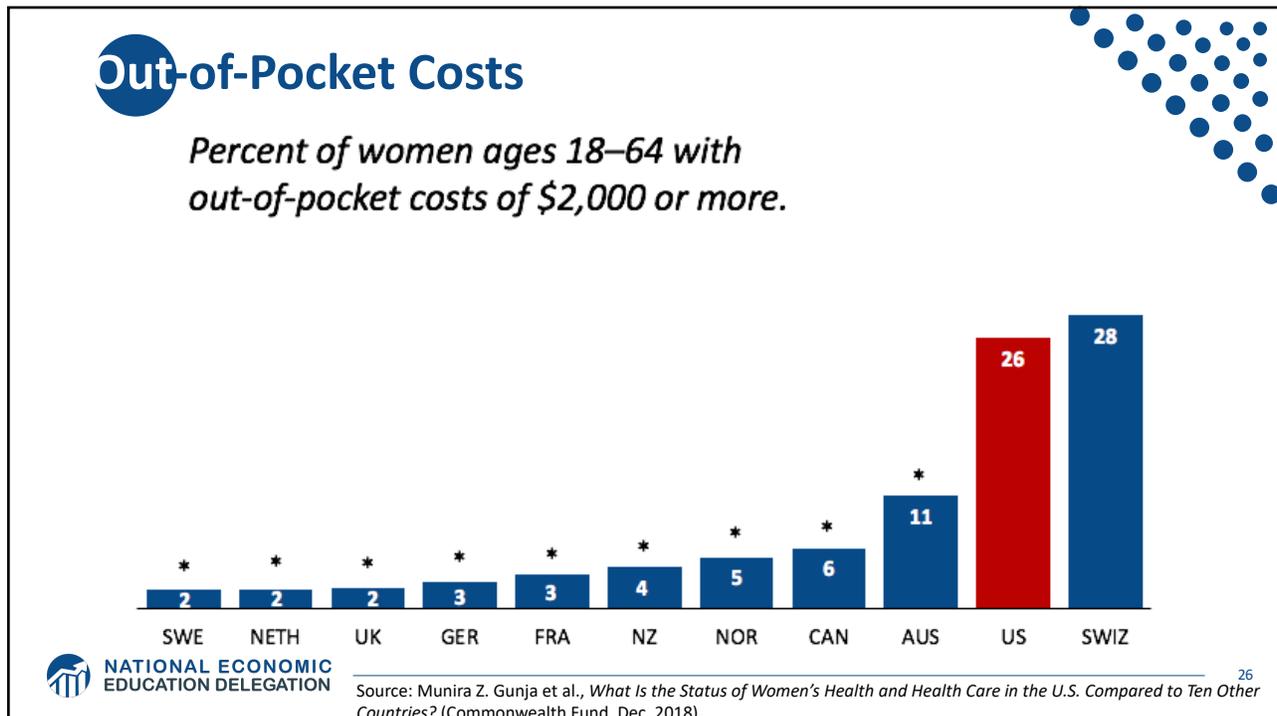
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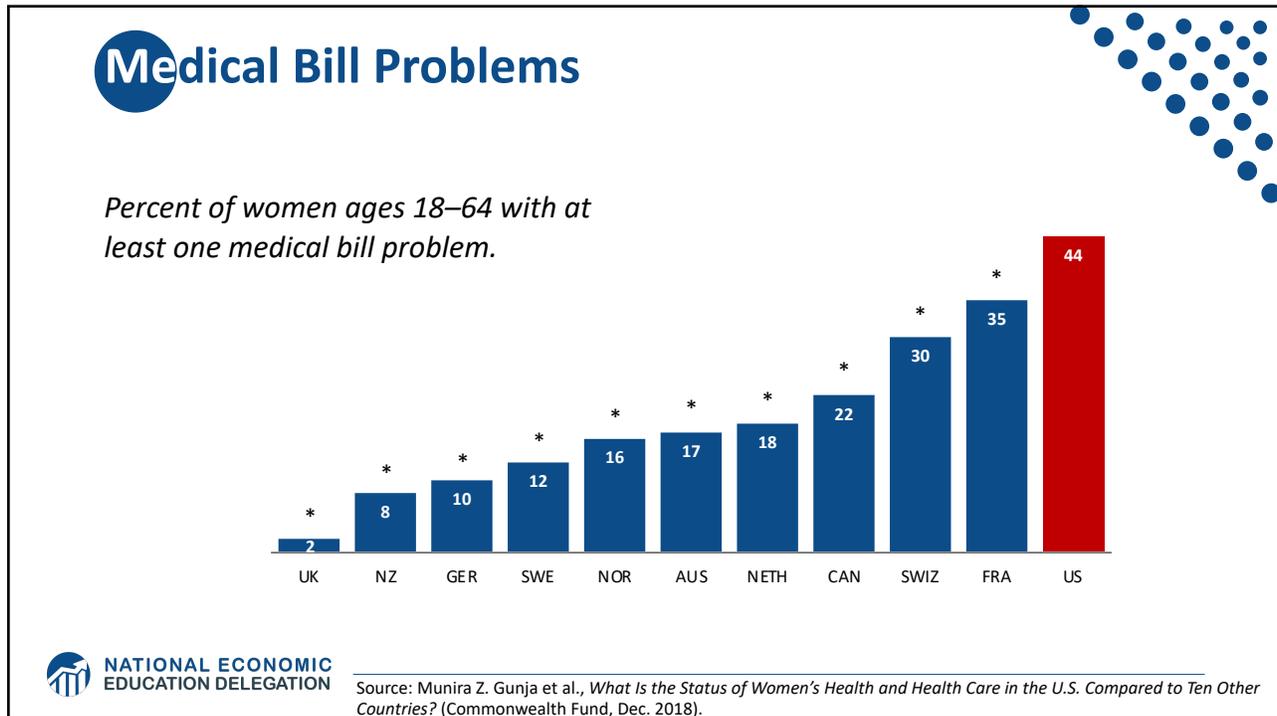
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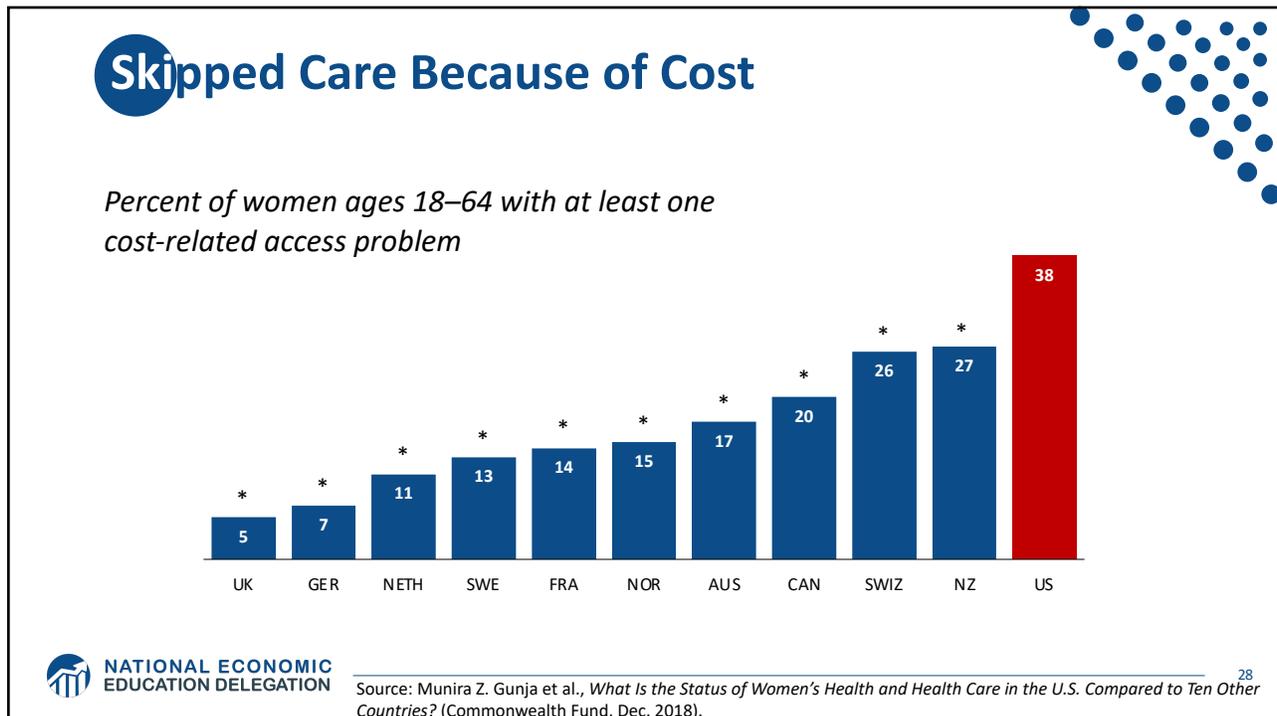
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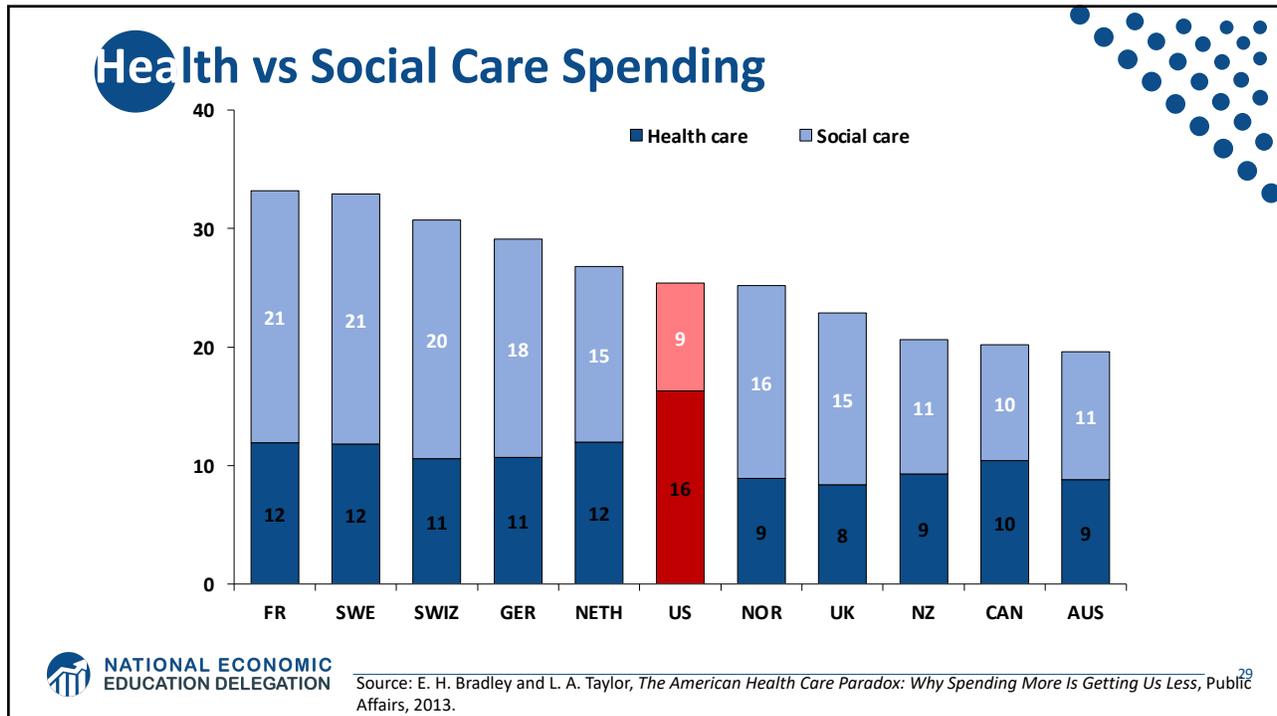
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## Health vs Social Care Spending

- A 2013 study by Bradley and Taylor found that the U.S. spent the least on social services—such as retirement and disability benefits, employment programs, and supportive housing—among the countries studied in this report, at just 9 percent of GDP.
- From 2000 to 2011, for every dollar the US spent on health care, the country spent another \$1.00 on social services, whereas across the OECD, for every dollar spent on health care, countries spend an additional \$2.50 on social services

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## Why is Healthcare Spending Increasing?

- Costs in the United States, and elsewhere are increasing rapidly.
- The share of economic spending on health care has been steadily increasing for all countries because:
  - Health spending growth has outpaced economic growth.
  - Richer countries demand more services, like attention to health.
- Also because of
  - Advances in medical technologies.
  - Increased demand for services.
  - Rising prices in the health sector – why?



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## Tradeoffs

Tradeoffs take place among the three legs:

- Increasing quality in health care may lead to higher health care costs.
  - This means a compromise in access (affordability).
- I.e., with increasing quality, access may suffer.
- By increasing access, quality may suffer.
- By decreasing costs, quality may suffer.

In healthcare in the United States, there are potential opportunities to improve all three simultaneously.

E.g., it is possible that increasing quality can reduce costs.



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# Quality



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## A Bit About Quality

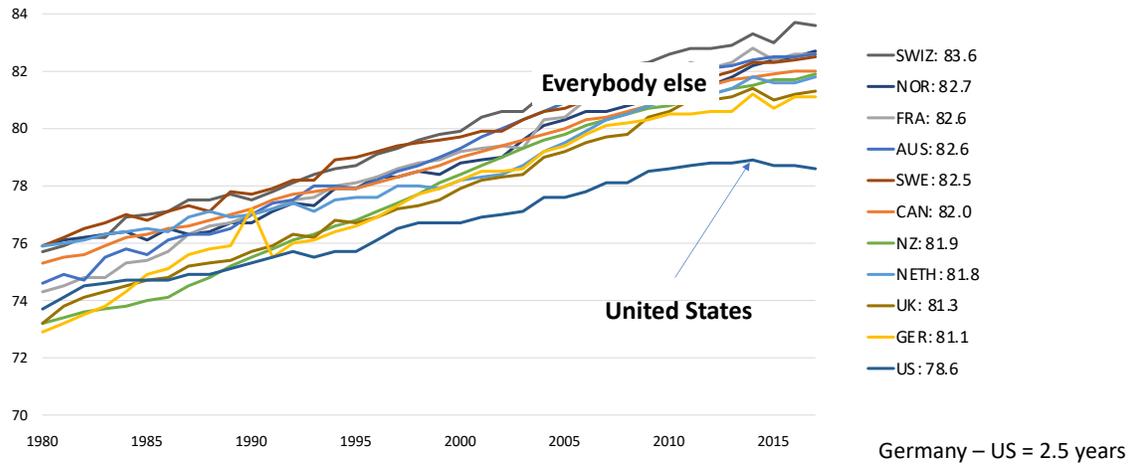
- The U.S. has the **highest chronic disease burden** and an obesity rate that is two times higher than the OECD average.
- Americans had **fewer physician visits** than peers in most countries, which may be related to a low supply of physicians in the U.S.
- Compared to peer nations, the U.S. has among the highest number of **hospitalizations from preventable causes** and the highest rate of avoidable deaths.
- Americans use some **expensive technologies**, such as MRIs, and specialized procedures, such as hip replacements, more often than our peers.
- The U.S. outperforms its peers in terms of **preventive measures** — it has one of the highest rates of breast cancer screening among women ages 50 to 69 and the second-highest rate (after the U.K.) of flu vaccinations among people age 65 and older.



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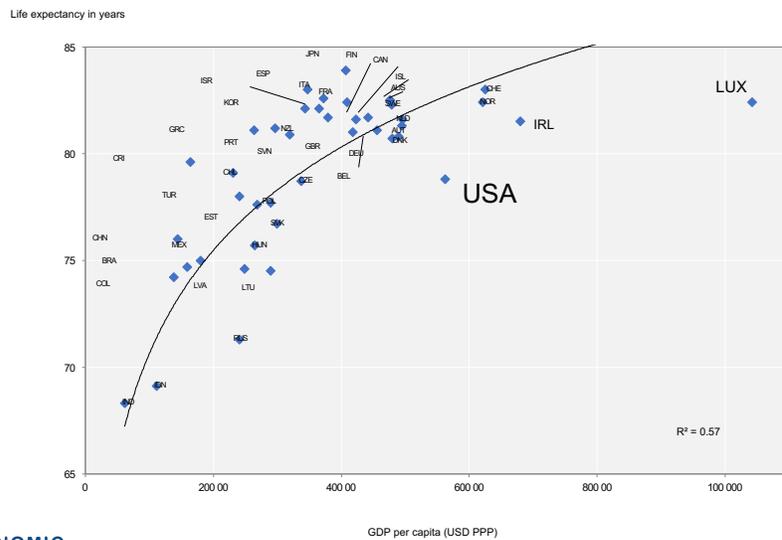
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# Life Expectancy: How Does the US Compare?



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# Life Expectancy & Per Capita GDP



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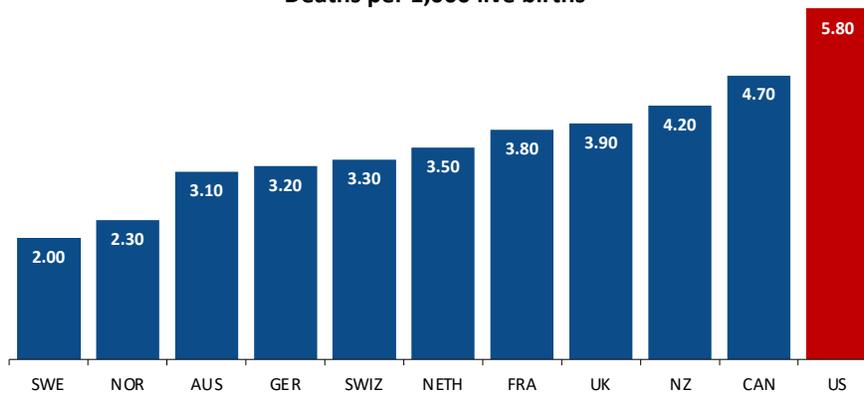
## Life Expectancy at Birth by Race, 2017

Race/Ethnicity	Life Expectancy (Years)
All Races	78.6
White	78.8
Black	75.3
Hispanic	81.8

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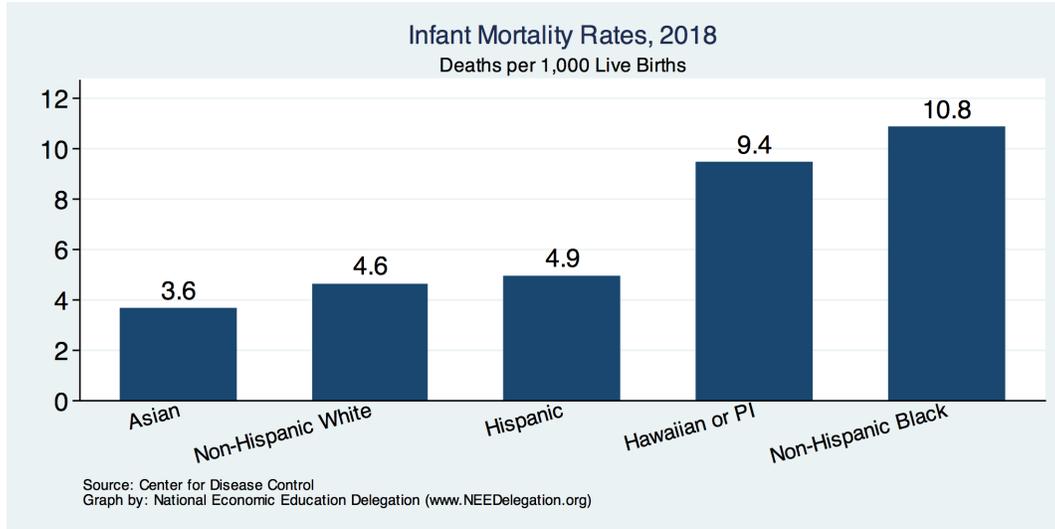
## Infant Mortality International Comparison

Deaths per 1,000 live births



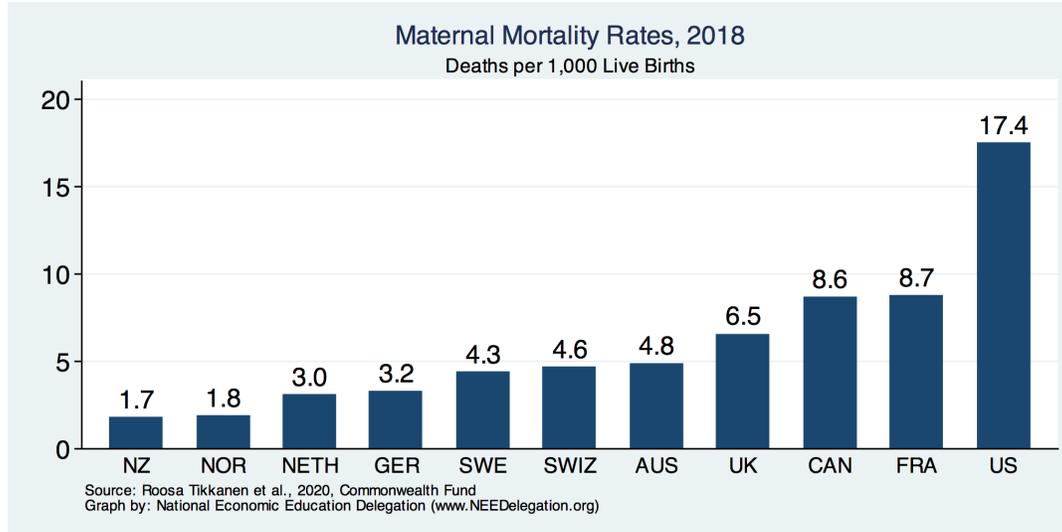
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## Infant Mortality by Race/Ethnicity

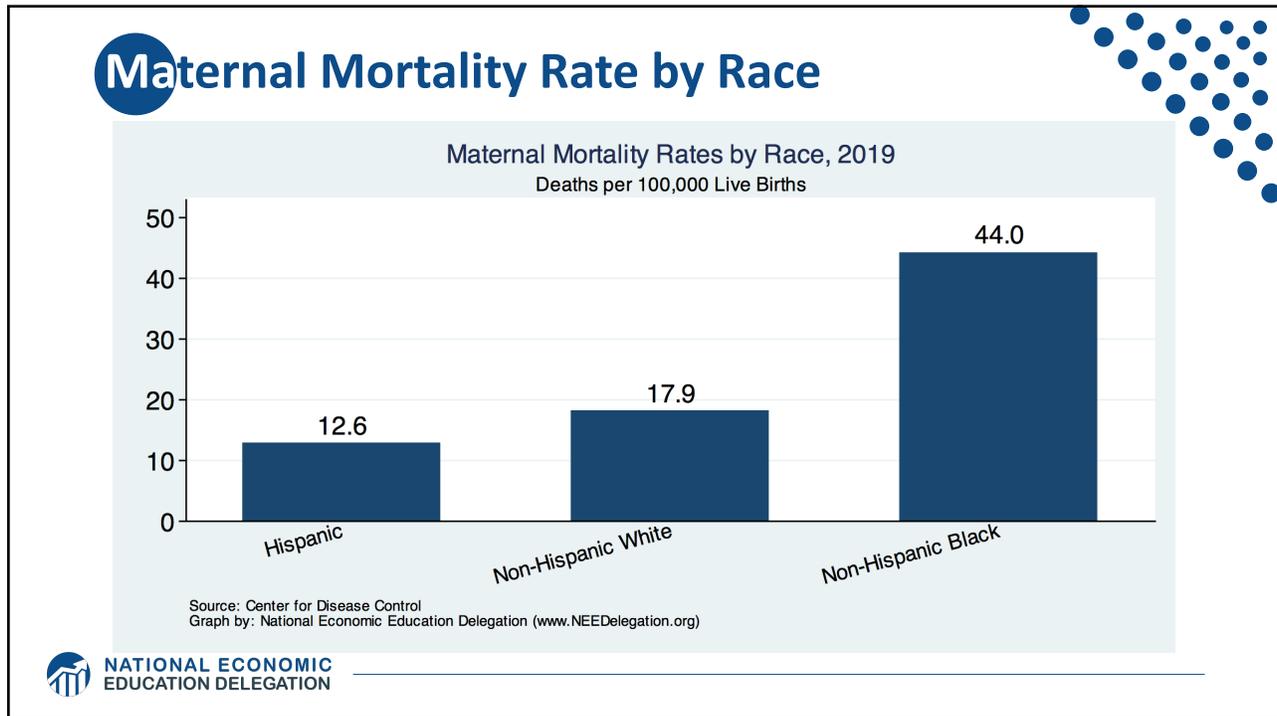


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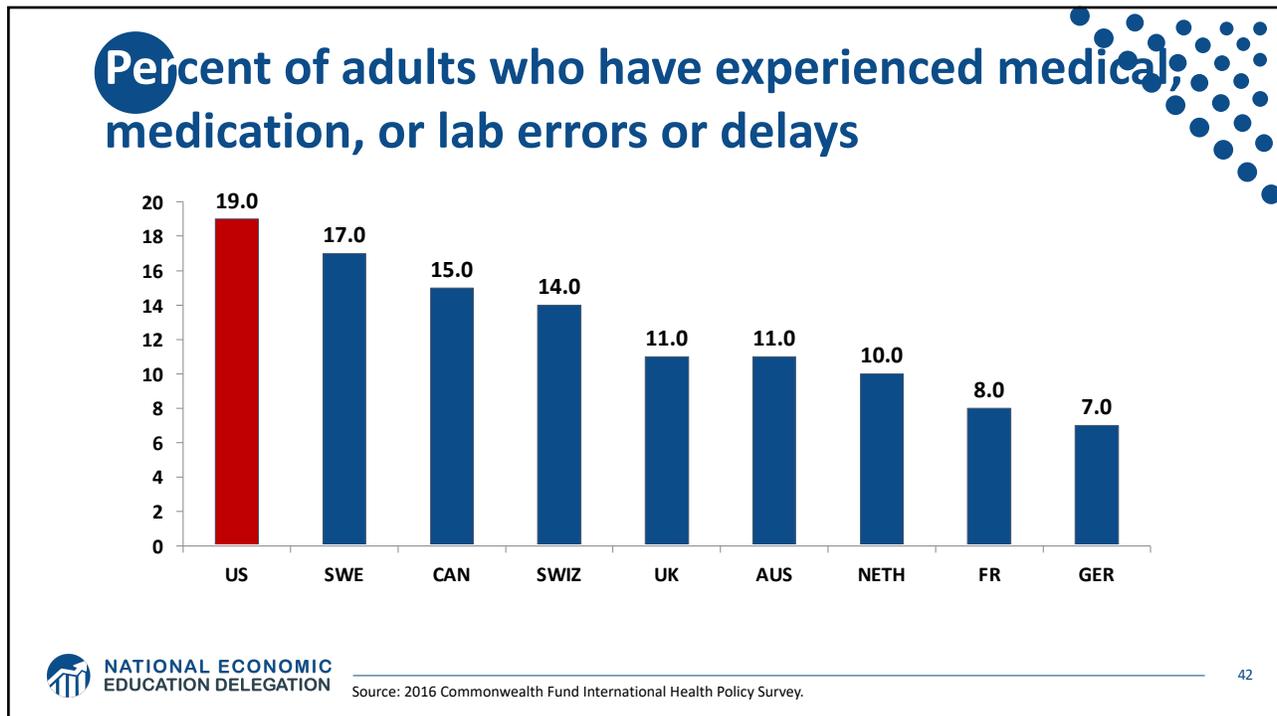
## Maternal Mortality Rate



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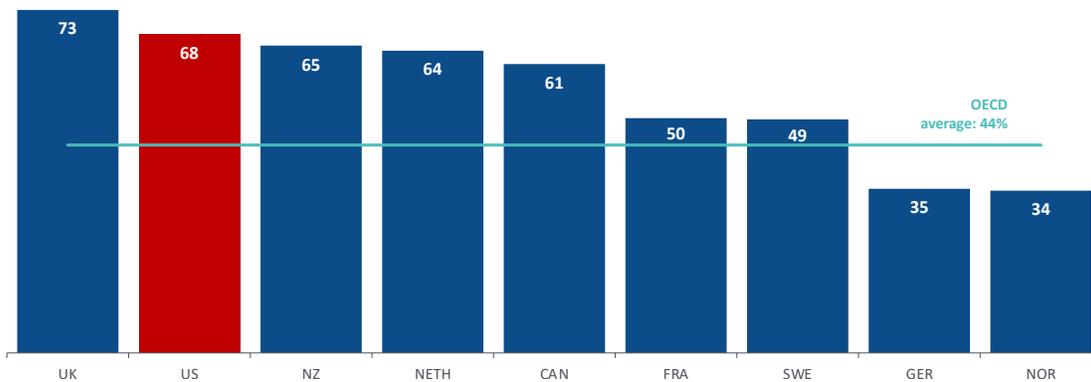
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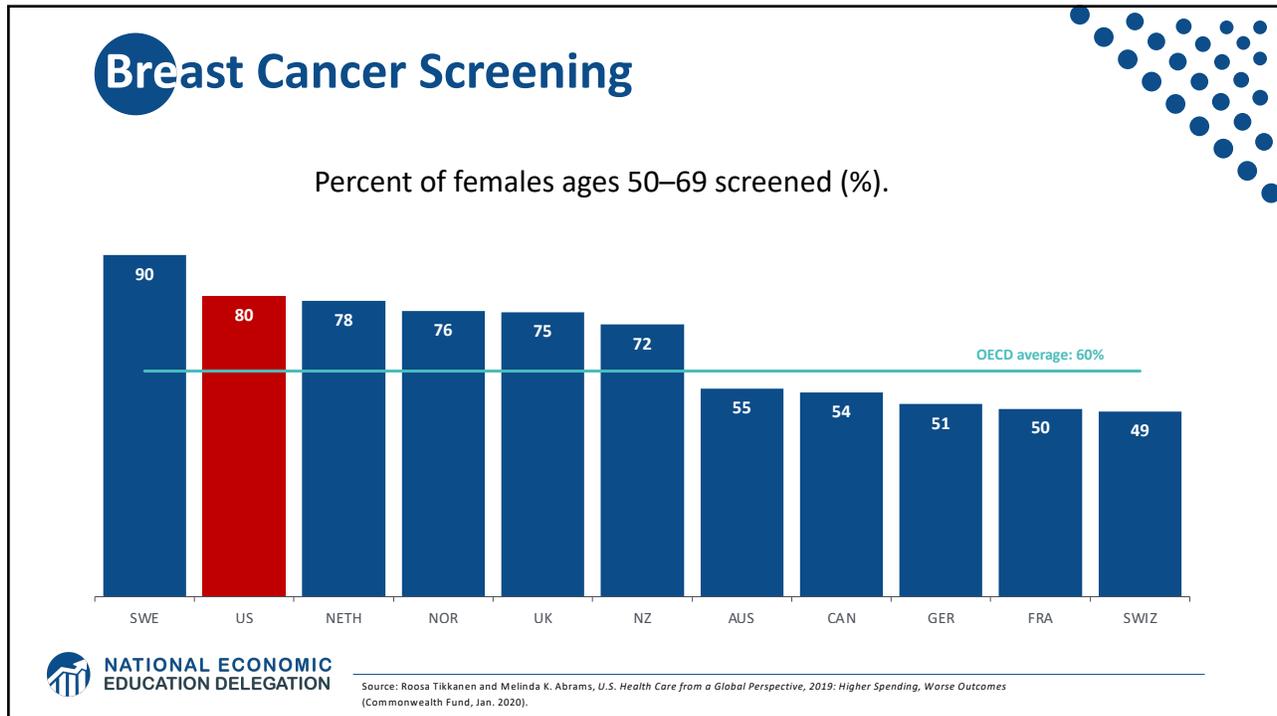
## Prevention and Screening

- The U.S. excels in **some** prevention measures, including flu vaccinations and breast cancer screenings.
- The U.S. has the highest average five-year survival rate for breast cancer, but the Lowest for Cervical Cancer.

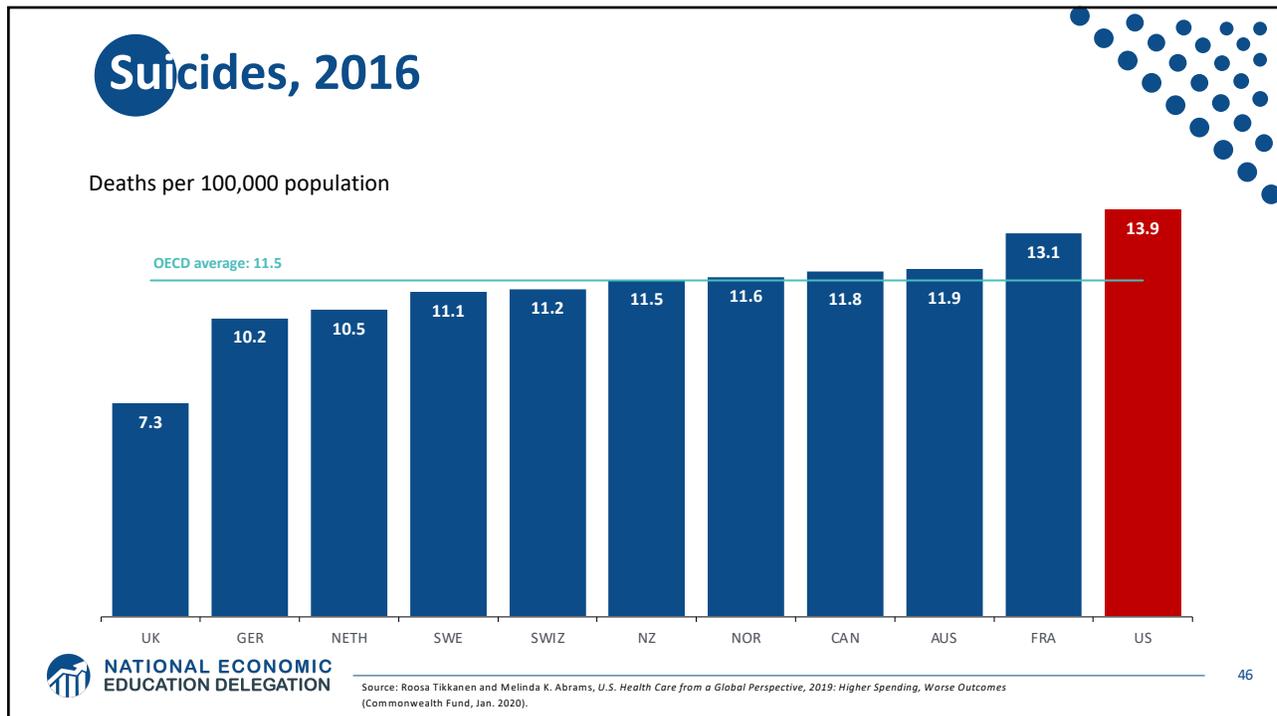
## Flu Immunization

Percent of adults age 65 and older immunized (%).

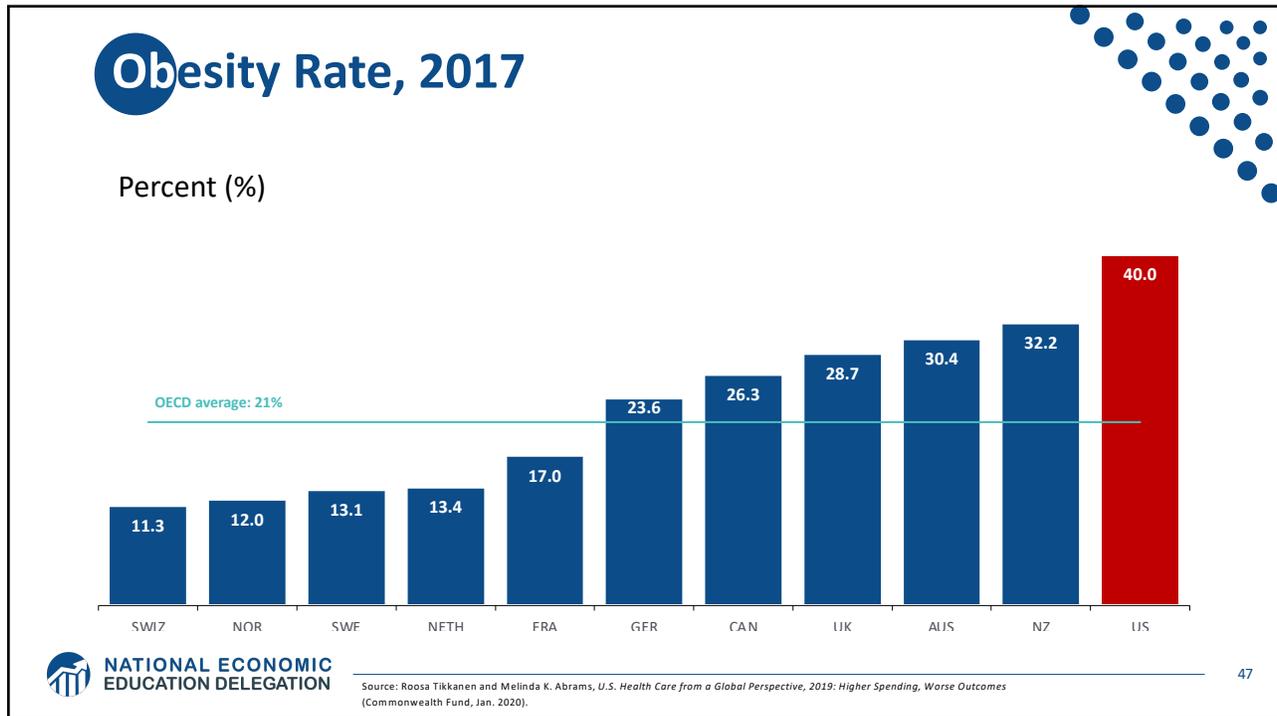




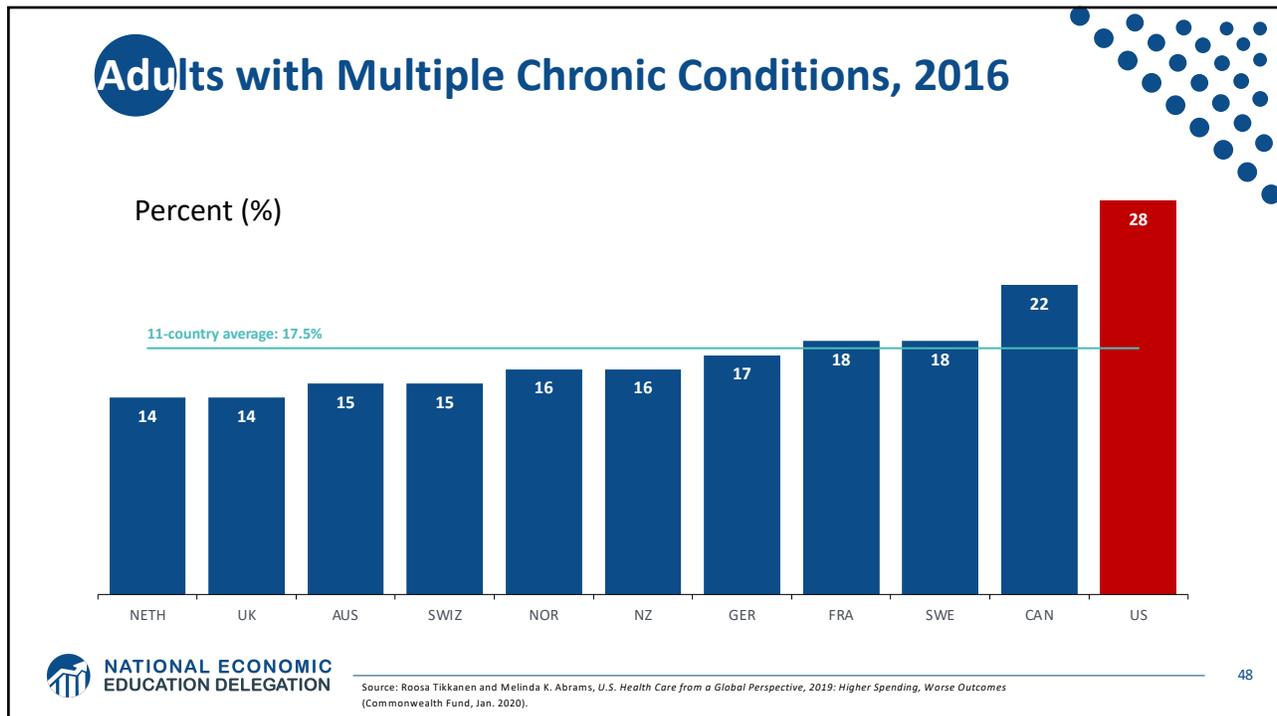
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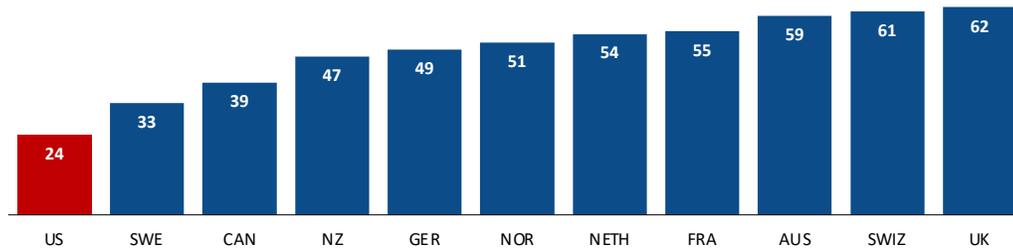
# The World Health Report 2000, *Health Systems: Improving Performance*

Overall Ranking		Overall Ranking	
30.	Canada	1.	France
31.	Finland	2.	Italy
32.	Australia	3.	San Marino
33.	Chile	4.	Andorra
34.	Denmark	5.	Malta
35.	Dominica	6.	Singapore
36.	Costa Rica	7.	Spain
37.	United States	8.	Oman
38.	Slovenia	9.	Austria
39.	Cuba	10.	Japan



# Perception of Quality of Medical Care

Percent of women ages 18–64 who rated their quality of medical care as *excellent or very good*.



Source: Munira Z. Gunja et al., *What Is the Status of Women's Health and Health Care in the U.S. Compared to Ten Other Countries?* (Commonwealth Fund, Dec. 2018).

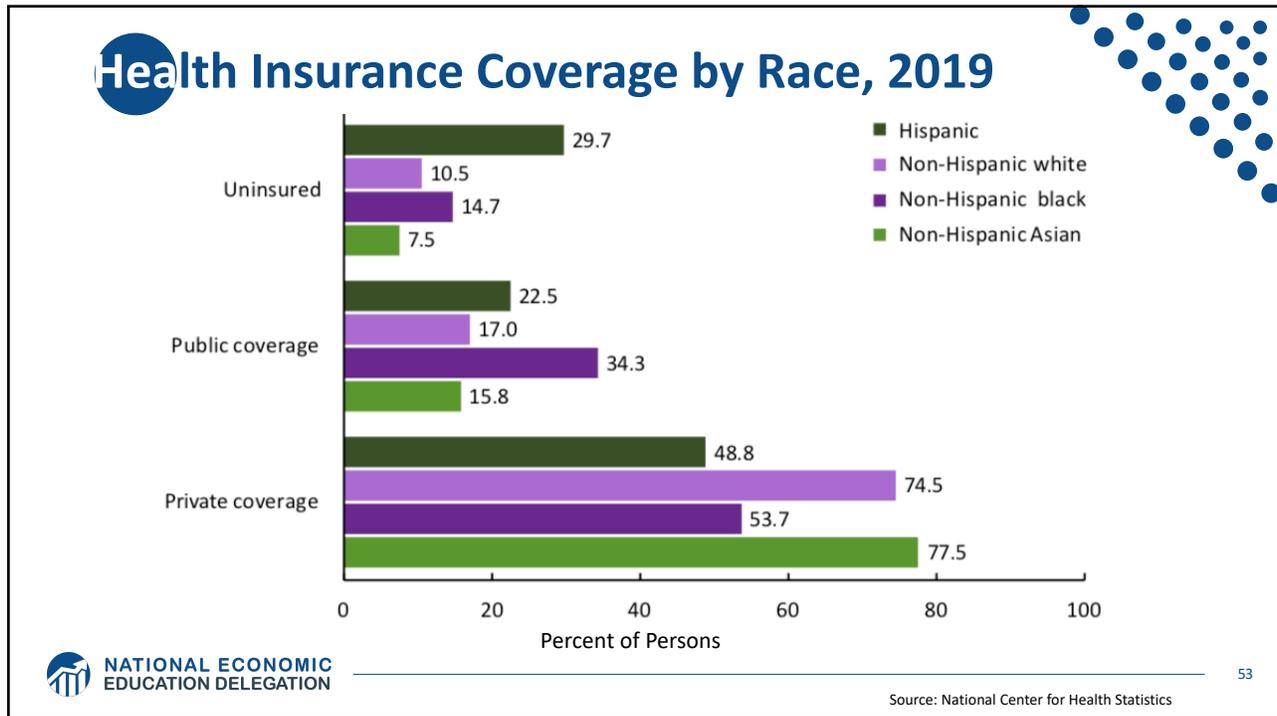
## Quality of Care Notes

- Metrics of quality in the U.S. are not very good.
- Quality of care is not considered very good in the U.S.
- The system has challenges: obesity/lifestyle.
- The system has bright spots!

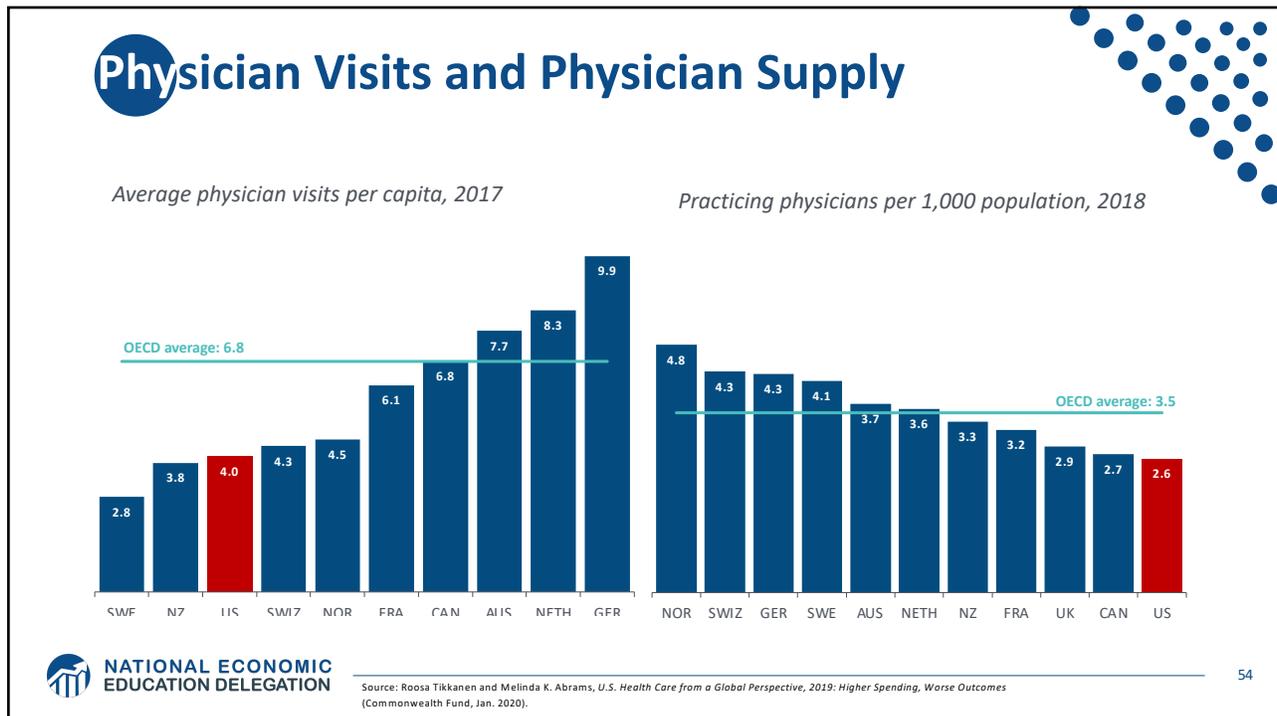
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## Access

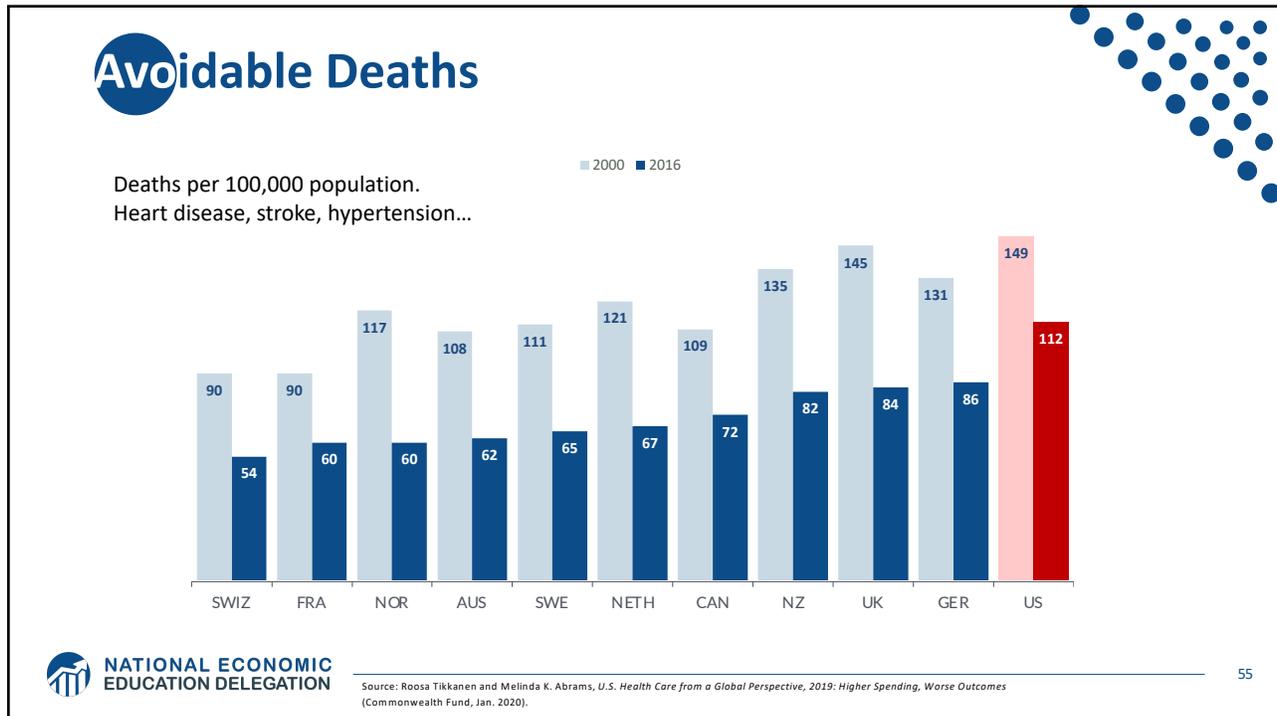
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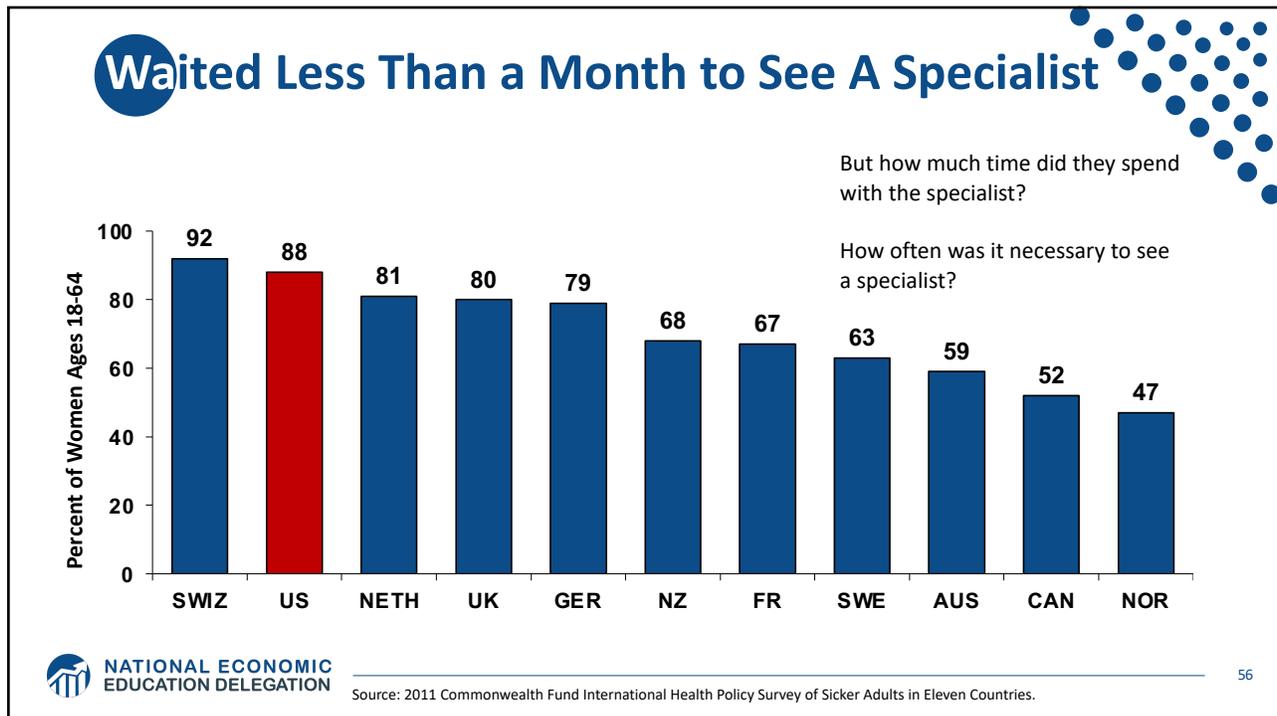
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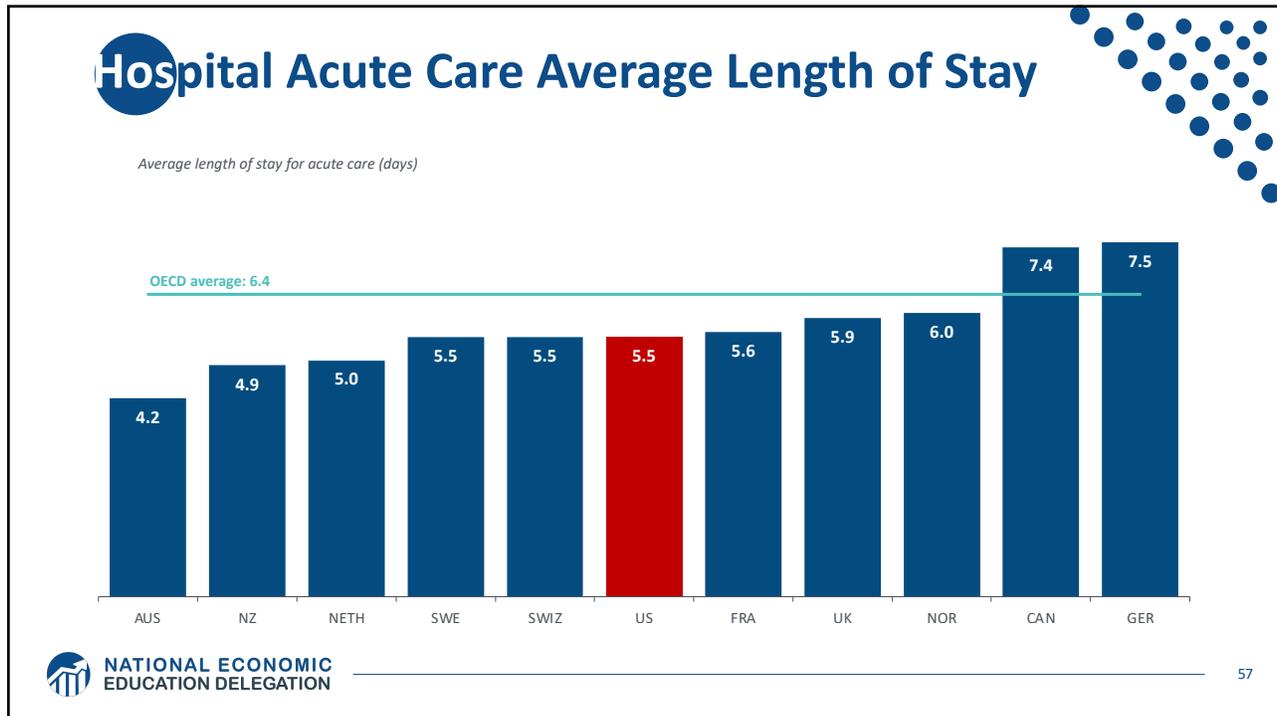
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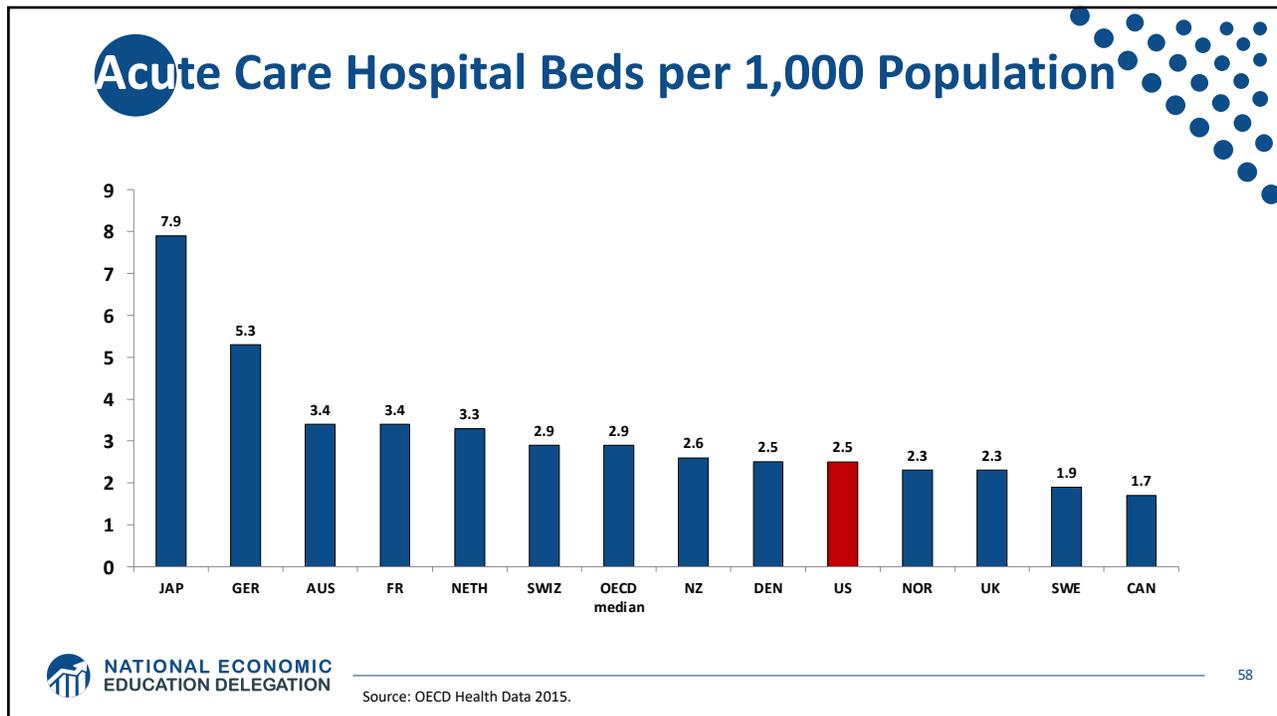
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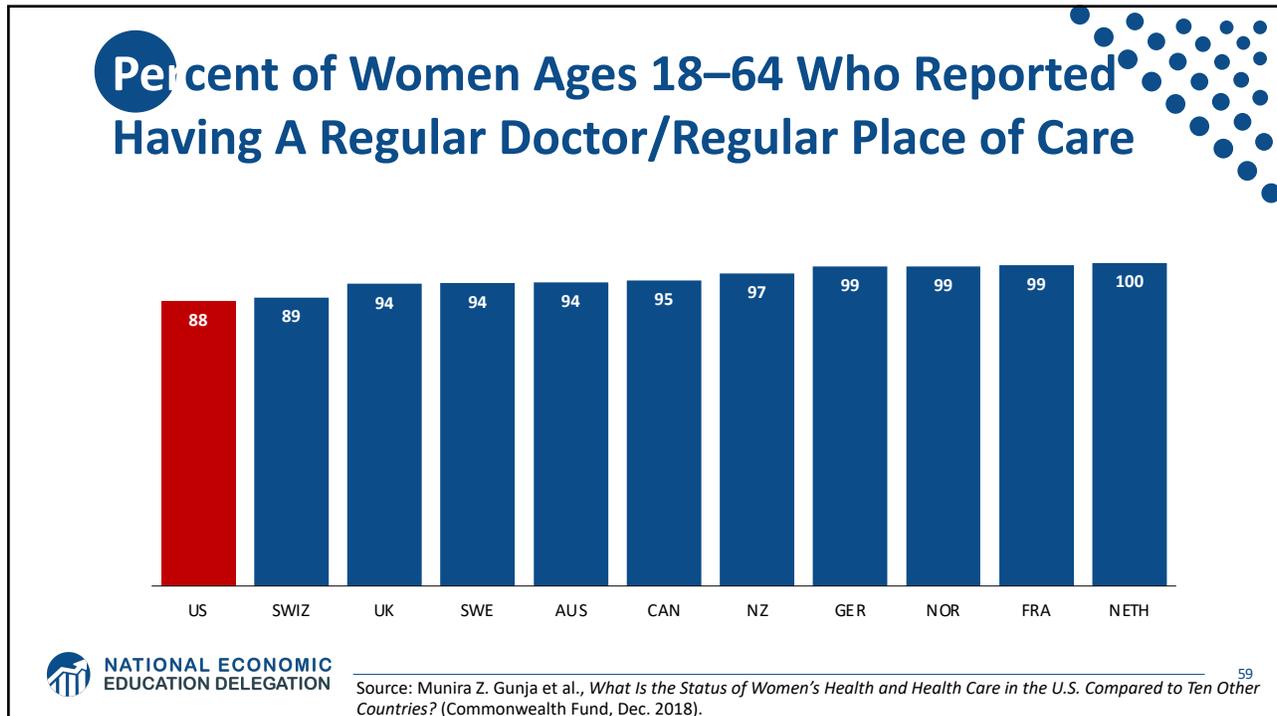
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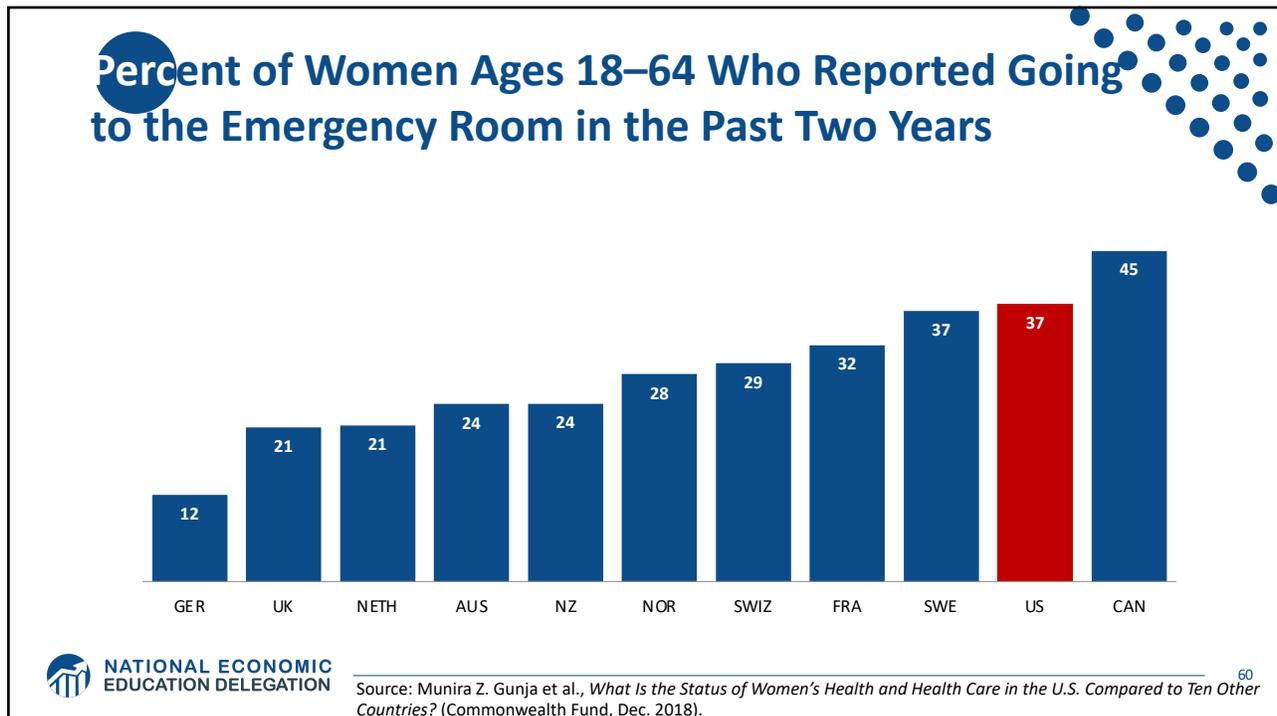
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## Access Notes

- U.S. has the highest level of spending.
- Insurance coverage in the U.S. is not universal.
- Supply of medical personnel and equipment may be lower than elsewhere.
- Avoidable (amenable) deaths are higher, perhaps indicating less access to care.
- Emergency room use is higher in the U.S. than elsewhere.
- Specialized medicine is more accessible.



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## Policy Matters for Costs, Access, and Quality



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## How Does Policy Matter?

- **Government spending**
  - Has implications for prices for private parties.
- **Competition policy**
  - Concentration of various parts of the healthcare industry may be impediments to success in all three areas.



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## Concentration and Hospitals



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## Hospital Monopolization

- Market consolidation among and between health systems, hospitals, medical groups, and health insurers has surged over the last decade.
- Over an 18-month period between July 2016 and January 2018:
  - hospitals acquired 8,000 more medical practices
  - 14,000 more physicians left independent practice to become hospital employees.
- The evidence suggests that with more government oversight and restraining influence over mergers, health care costs would have been lower.

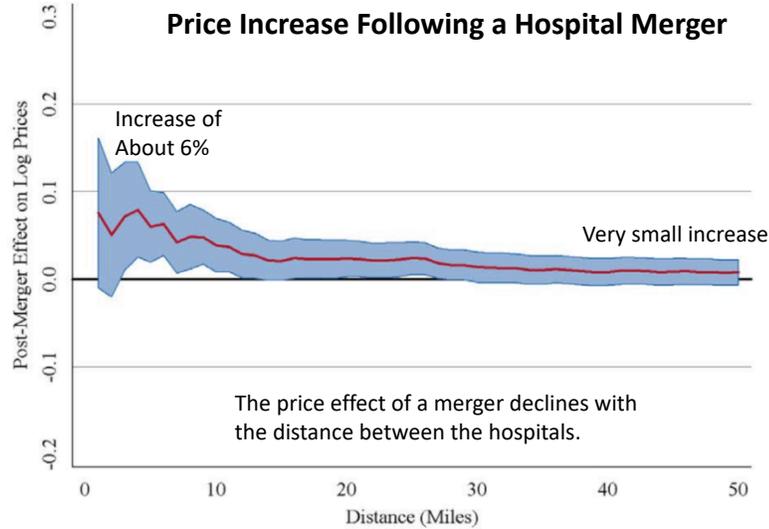


## Potential Benefits of Consolidation

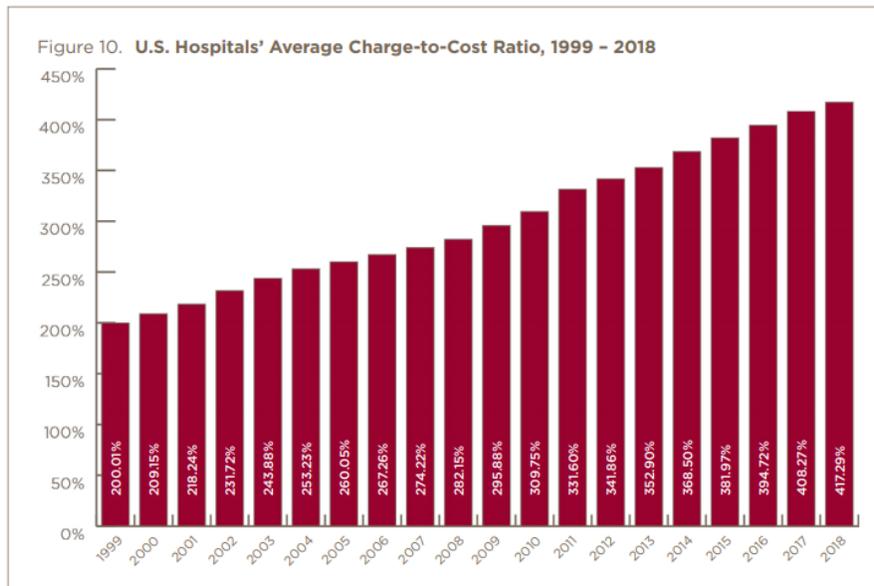
- **Consolidation could lead to potential benefits (“Triple Aim”)**
  - Coordination of care
  - Investment in care coordination, quality.
  - Reduction of costly, unnecessary duplication.
  - Achievement of scale.
    - o Costs
      - Risk contracts
      - Volume-outcome.
- **But, ...**
  - Consolidation isn’t integration.
  - Evidence doesn’t support the claims.
    - o Consolidation has not led to lower costs, better quality, or coordinated care.
    - o If anything, just the opposite has happened.
    - o We have 30 years of experience with consolidation to draw on.
      - Hospital mergers, integrated deliver systems, physician practice mergers, hospital acquisitions of physician practices...



## Evidence on Consolidation



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## Hospital Monopolization Across the Nation

- Hospitals Charge Patients More Than Four Times the Cost of Care
- The most expensive hospitals cost of care range from 1,129% at the low end to 1,808% at the high end.
- Most of the top 100 most expensive hospitals are located in states in the south and west.
  - Florida had the highest number, with 40 hospitals.
  - Other top states included Texas with 14 hospitals, Alabama with eight, Nevada with seven, and California with six.

## Hospital Monopolization: California

- A large Northern California hospital system used its size and influence to achieve a "domination of the market".
- Sutter Health grew into a behemoth hospital system and then, like a classic monopoly, used its dominance in Northern California to raise hospital prices.
- Sutter used its windfall from excessive pricing to acquire more entities and grew into a conglomerate of 24 hospitals, 12,000 doctors and several cancer, cardiac and other specialty centers.
- In some counties, Sutter was the sole hospital for a thousand square miles.

## Hospital Monopolization: Florida

- South Florida hospitals recorded combined profits of nearly \$1.3 billion in 2018 and have posted combined profits above \$1 billion for four of the past five years.
- HCA hospitals were the most profitable, with a net income of \$363.6 million, according to the report.
- Baptist Health, a nonprofit and the largest system in the Miami area, had net income of \$142.8 million and Memorial Healthcare System in Broward County, a nonprofit hospital network, had net income of \$158.6 million.



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## Concentration and Pharma



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# Drug Price Comparisons

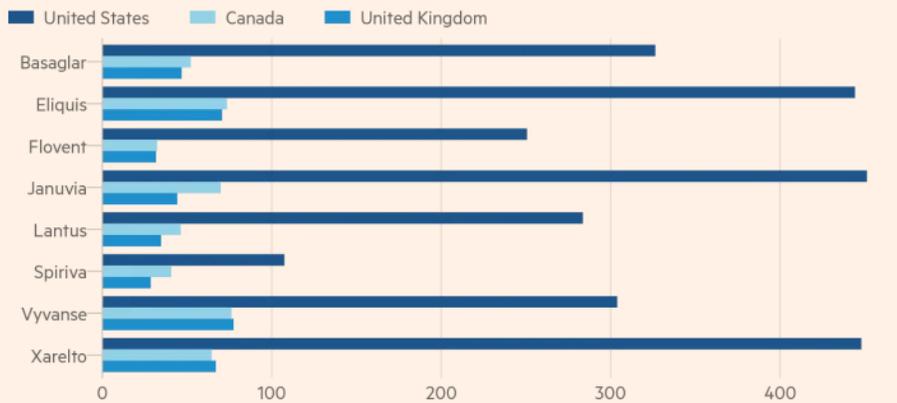
**Drug Prices for 30 Most Commonly Prescribed Brand-Name and Generic Drugs, 2006–07**  
 US is set at 1.00

	AUS	CAN	FR	GER	NETH	NZ	SWITZ	UK	US
<b>Brand-name drugs</b>	0.40	0.64	0.32	0.43	0.39	0.33	0.51	0.46	1.00
<b>Generic drugs</b>	2.57	1.78	2.85	3.99	1.96	0.90	3.11	1.75	1.00

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## Drugs in the US cost much more than their equivalent in the UK and Canada

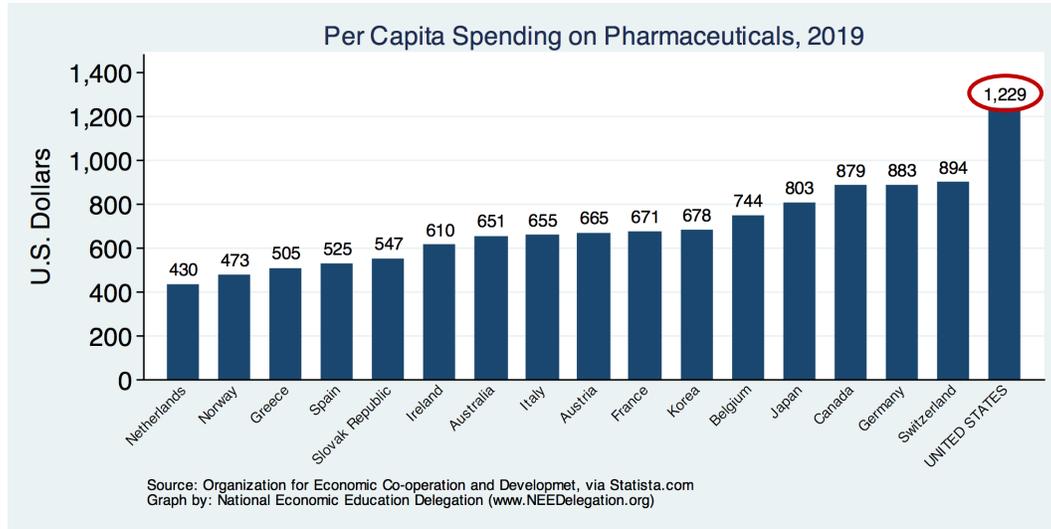
Eight bestselling brand drugs for conditions ranging from diabetes to asthma and ADHD.  
 Drug price (\$)



Note: Their equivalents may be generic versions. Prices have been converted to US dollars using exchange rates available on September 17th, 2019

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## Spending on Pharmaceuticals

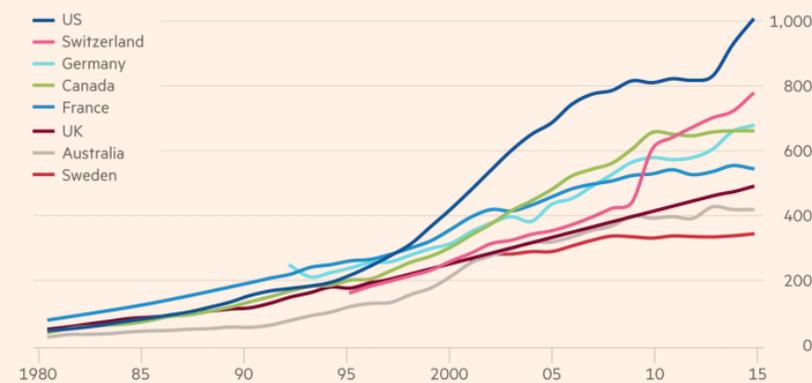


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## Drug Prices: Trends Over Time

US prescription drug spending per capita has increased faster than in other countries\*

Selected countries (\$)



\* Figures relate to prescription drugs, not hospital spending

Source: The Commonwealth Fund



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## Price Hikes

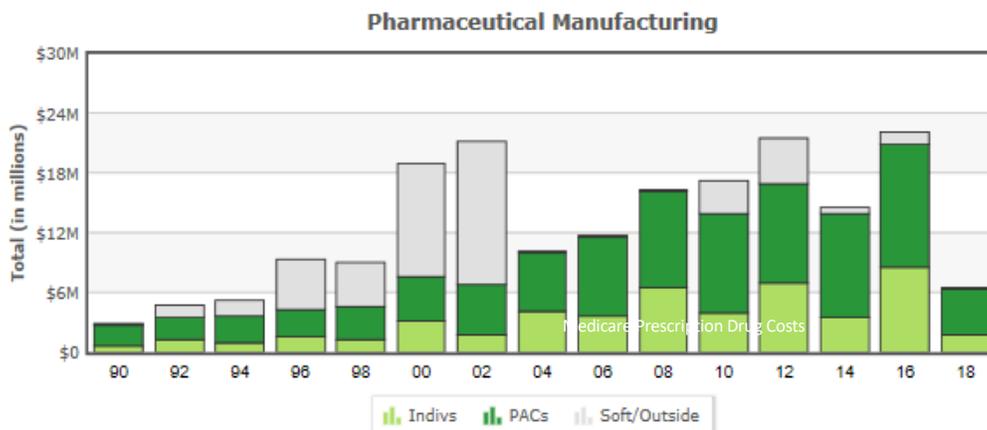
- Turing Pharmaceuticals' 5,555% price increase of Daraprim® in 2015 and Mylan's 500% increase of EpiPen®...
- More than 3,400 drugs boosted their prices in the first six months of 2019, an increase of 17% in the number of drug hikes from a year earlier.
  - The average price hike is 10.5%, or 5 times the rate of inflation.
- About 41 drugs boosted their prices by more than 100% in 2019.
- Over the course of a decade, the net cost of prescription drugs in the United States rose more than three times faster than the rate of inflation.

## Reasons for Higher Drug Prices

- The **Medicare Prescription Drug, Improvement, and Modernization Act**, also called the **Medicare Modernization Act** or MMA, is a federal **law** of the United States, enacted in 2003.
- Concentration of pharmaceutical companies.

## Lobbying

### Contribution Trends, 1990-2018



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## Medicare Modernization Act

- Prescription Drug Component
- Medicare Part D, **by law**, cannot negotiate drug prices like other governments do.
- In 2017, Medicare spent nearly \$8 billion on insulin.
  - The researchers said that if Medicare were allowed to **negotiate** drug prices like the U.S. Department of Veterans Affairs (VA) can, Medicare could **save about \$4.4 billion just on insulin**.



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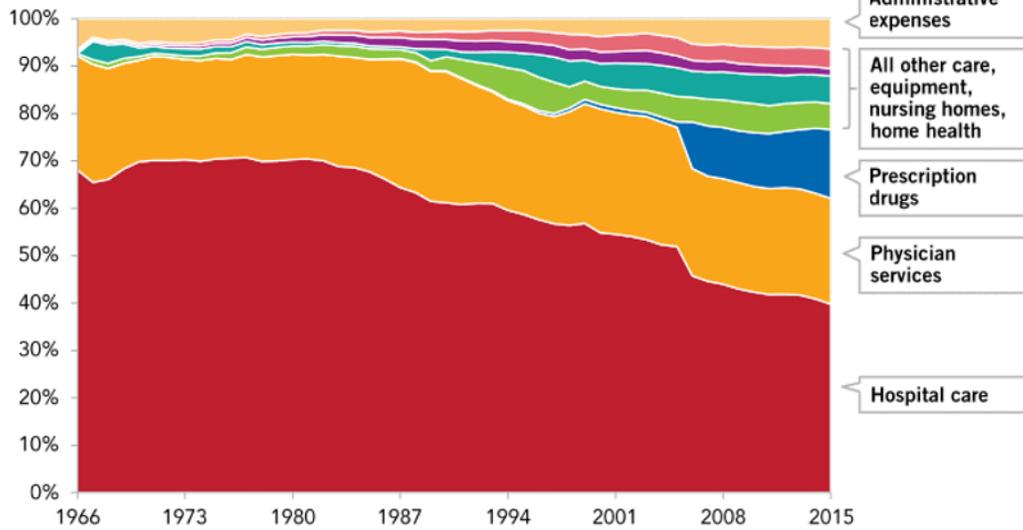
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## How Much is Negotiation Worth?

- The CBO estimates that drug pricing negotiation would reduce federal spending by \$456 billion and increase revenues by \$45 billion over 10 years. This would include:
  - direct savings to the Medicare Part D program (**\$448B**)
  - a reduction in spending related to the Affordable Care Act’s subsidies for commercial health plans
  - a reduction in spending for the Federal Employees Health Benefits Program
  - an increase in government revenue from employers using savings from reduced premiums to fund taxable wage increases for their workers.

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COMPOSITION OF MEDICARE PAYMENTS (% OF TOTAL MEDICARE SPENDING)



SOURCE: Centers for Medicare and Medicaid Services, National Health Expenditures December 2016. Compiled by PGPF.

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## Concentration in Pharmaceutical Companies

- The number of mergers and acquisitions involving one of the top 25 firms more than doubled:
  - 29 in 2006 to 61 in 2015
  
- Between 1995 and 2015, 60 drug companies merged into 10.



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## According to the GAO:

- **Between 2006 and 2015:**
  - Pharma and Biotech revenues increased from \$534 billion to \$775 billion (2015 \$)
  - 67% of drug companies saw an increase in profit margins.
  - Top 25: profit margins were between 15 and 20%.
    - o Across non-drug companies, profit margins are 4-9%.
- **Mergers**
  - # held constant, but deal values increased.
  - Largest 10 companies had about 38% market share – higher in narrower markets.
- **Between 2008 and 2014:**
  - 179 to 263 drug approvals occurred annually
    - o 13% of approvals were for novel drugs.
- **Research indicates that fewer competitors are associated with higher prices.**
  - Especially in the market for generics.
- **Mergers have a varied impact on innovation: R&D spending, patent approvals, and drug approvals.**
  - Certain merger retrospective studies have found a negative effect.



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# Concentration of Insurance



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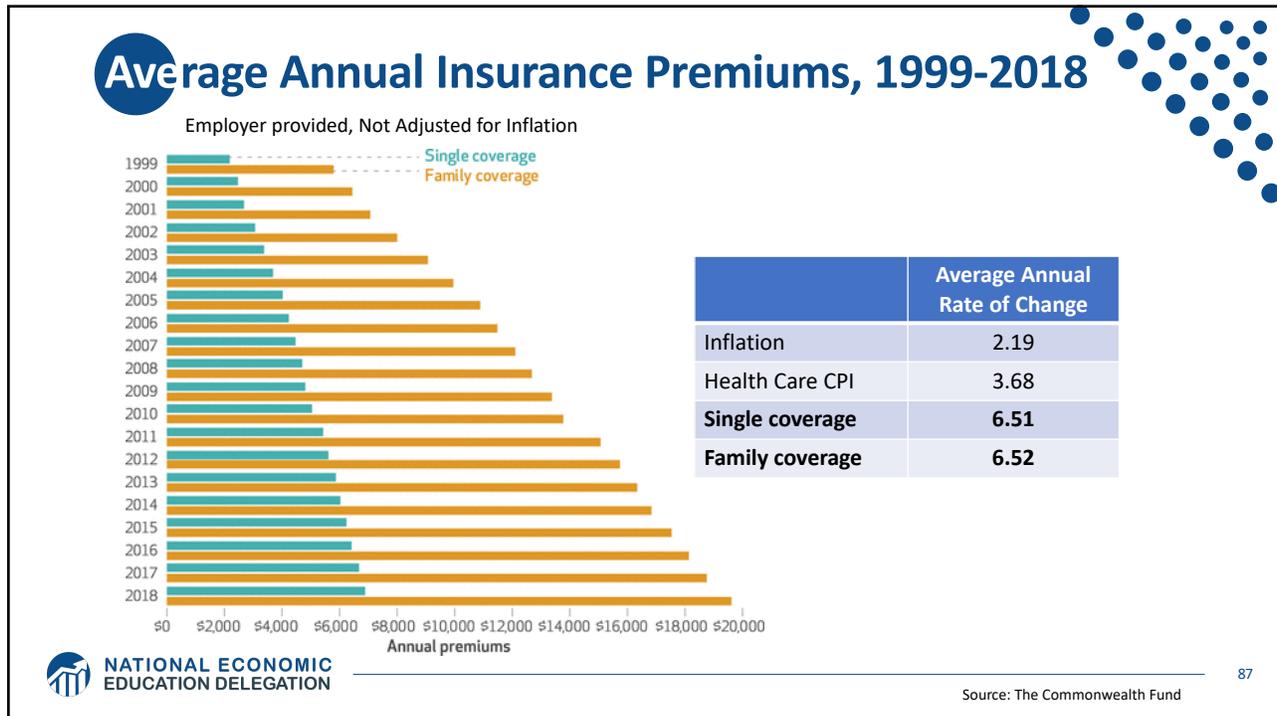
## Monopolization of Health Insurance Market

- As of 2011, there were close to **100 insurers** in **Switzerland** competing for consumer health care dollars, **forcing firms to compete** by setting prices to just cover costs.
- In the United States, **markets are state specific** and consumers may choose from plans available in the state in which they reside.
- In 2014, of the 50 states and the District of Columbia:
  - 11 had only 1 or 2 insurers
  - 21 had 3 or 4, and
  - only 19 states had 5 or more.
- As of July 2019, the number of states with only 1 or 2 insurers had increased from 11 to 20.

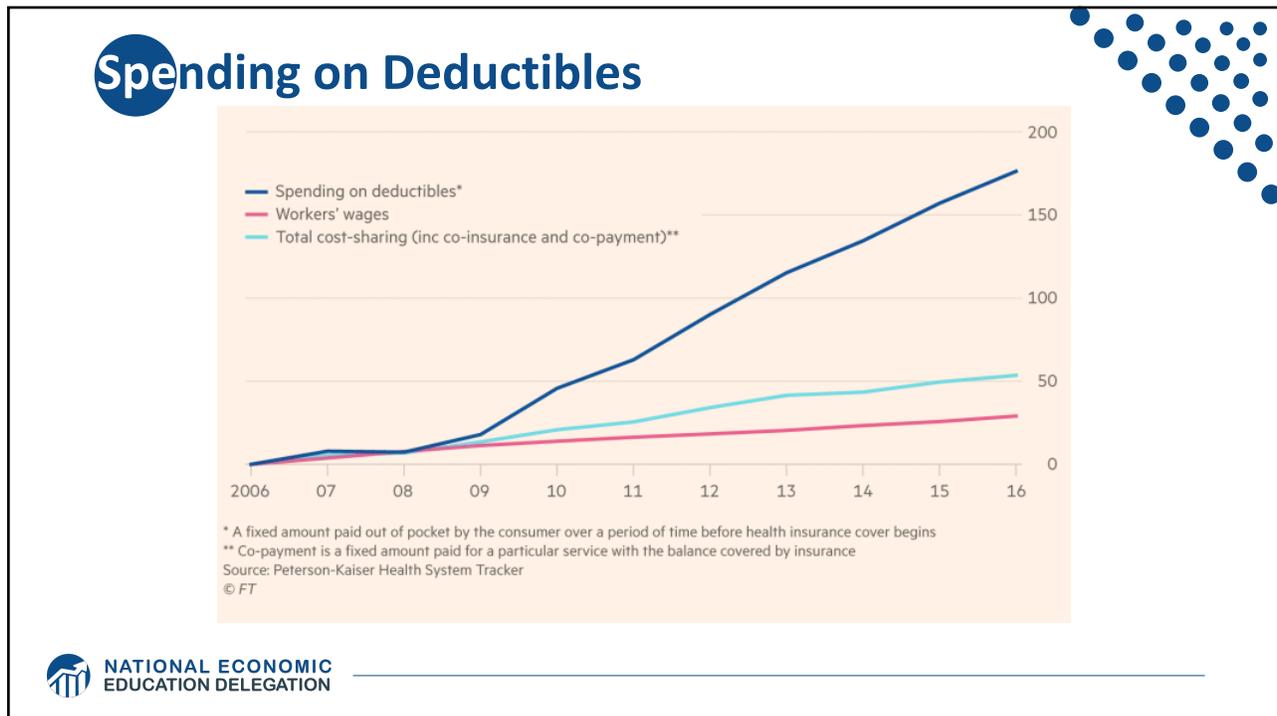


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## Reason for Higher Health Insurance Rates

- Rising prices in the health sector
- Advances in medical technologies
- Increased demand for services
- Concentration of insurance companies!



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## Health Care Systems and Institutions



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## Health System Classification

- **Developed countries of the world have each taken a different approach for their health care delivery systems**
- **5 basic models:**
  - National health insurance (Canada)
  - Bismarck (France, Germany, Japan, Switzerland)
  - Beveridge – socialized medicine (United Kingdom, Spain, New Zealand)
  - Out of pocket model – you pay yourself
  - Mixed (United States)



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## US Health Care System

- **Medicare – National Health Insurance**
- **Military Veteran Care – Beveridge model (socialized medicine)**
- **Employer-sponsored insurance – Bismarck model**
- **Individual market health plans - Bismarck model**
- **Uninsured - Out of pocket model**



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# Health Insurance and Reform



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## Definition: Universal Coverage

- **Universal coverage** refers to health care systems in which all individuals have insurance coverage.
- Generally, this coverage includes:
  - Access to all needed services and benefits.
  - Protects individuals from excessive financial hardships.
- Canada has universal coverage, the United States does not.



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## Definition: Single-Payer

- **Single-payer** refers to financing a health care system by making one entity solely and exclusively responsible for paying for medical goods and services.
- It is only the financing component that is socialized.
  - The money for the payment can be either collected by
    - Taxes collected by the government
    - Premiums collected by National or Public Health Insurance
- **Single-payer systems: 17 countries**
  - Norway, Japan, United Kingdom, Kuwait, Sweden, Bahrain, Brunei, Canada, United Arab Emirates, Denmark, Finland, Slovenia, Italy, Portugal, Cyprus, Spain, and Iceland.



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## Definition: Socialized Medicine

- **Socialized medicine:** this model actually takes the single-payer system one step further.
  - Government not only pays for health care but operates the hospitals and employs the medical staff.
- This is NOT part of the current debate in the US.



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## Definition: Third-Party Payer

- A **third-party payer** is an entity that pays medical claims on behalf of the insured. Examples of third-party payers include government agencies, insurance companies, health maintenance organizations (HMOs), and employers.
  - Employer-sponsored health plans
  - Individual market health plans
  - National health insurance



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## Summary

- US HealthCare system is not performing well (very expensive with low quality and access).
- One of the main reasons for very high costs is the monopolization of healthcare markets.
  - Hospitals, health insurance, big pharma, physicians, etc.
- In addition, the Medicare Modernization Act of 2003 by law prevents government to negotiate drug prices.
- A few simple solutions could drastically reduce costs:
  - Enforcement of antitrust laws in this sector.
  - Introduction of a public option in the health insurance market.
  - Ability for the US government to negotiate drug prices like most every other nation.
- Universal health insurance would increase access and perhaps also reduce costs.
- But there are always tradeoffs: you can pick two, but the third may suffer.



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**Thank you!**

# Any Questions?

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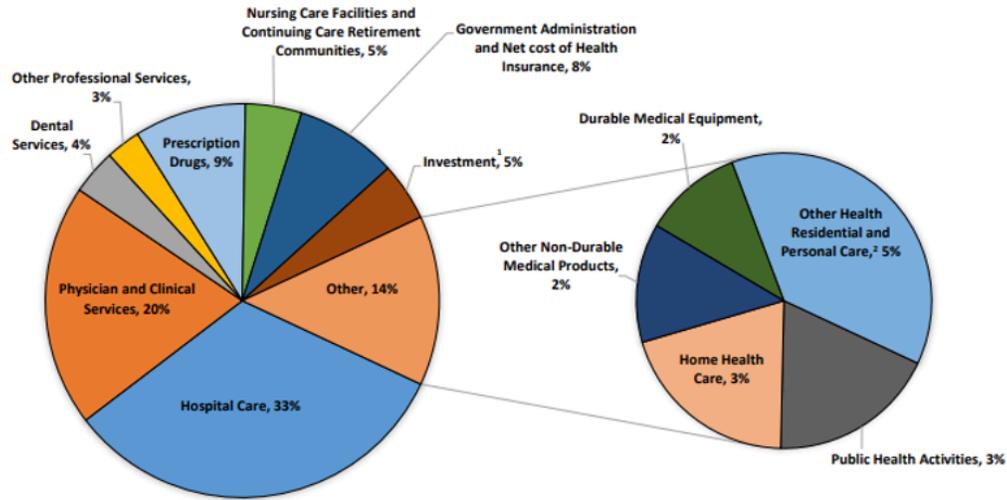


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- Black-White Wealth Gap
- Autonomous Vehicles
- US Social Policy



# Where the money goes?



Source: Centers for Medicare & Medicaid Services, Office of the Actuary, National Health Statistics Group.