Market for Health Insurance

Main Items

- **Understanding health insurance mechanisms (in US and in parts of Europe) will be critical to understanding the three modules we will cover (listed in the syllabus).**
- We will focus on two main items in these slides
  - Why people buy health insurance and related issues (slides 12-23)
  - **Data** on heath insurance, affordability, and pharmaceuticals (this material is mainly in slides 27-34 in the end)
- Quite a bit of the materials are in the form of general overview and brief description of the U.S. health insurance system. We will briefly go over some of them. You should take a look at these materials yourself.
- We will blend various insurance issues with biopharma items in the specialized modules

Development of Health Insurance

TABLE 6.1 IMPORTANT DATES IN THE DEVELOPMENT OF THE U.S. HEALTH INSURANCE INDUSTRY

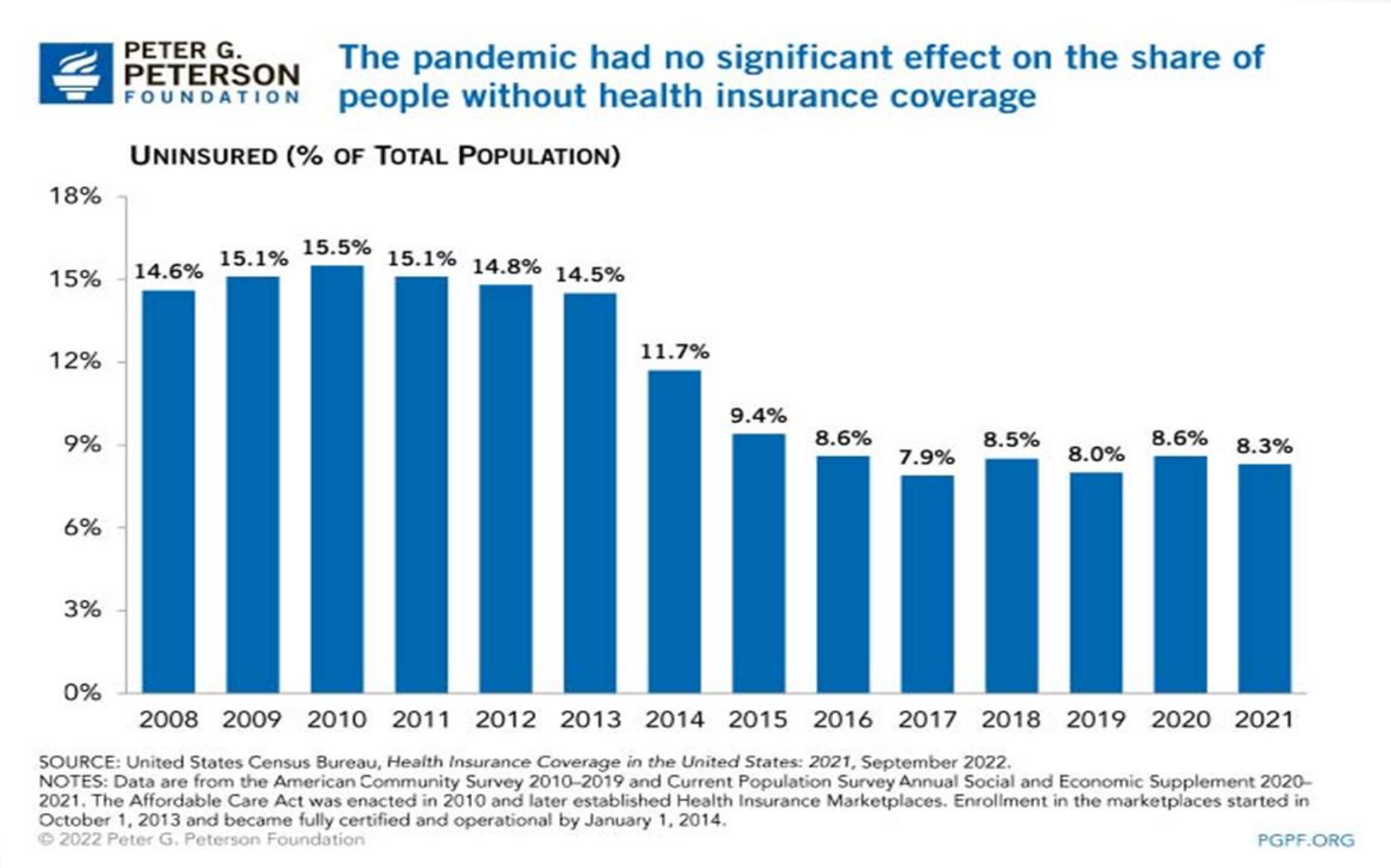
Date	Event
1798	Congress established U.S. Marine Hospital Services for seamen.
1847	The first insurer to issue sickness insurance was organized: The Massachusetts Health Insurance Company of Boston.
1849	New York State passed first general insurance law.
1850	Individual accident insurance became available with the chartering of the Franklin Health Assurance Company of Massachusetts.
1870	Companies in several industries, including mining, lumber, and railroads, began developing plans to cover medical services.
1899	Aetna Life Insurance Company offered insurance covering disabilities caused by most diseases.
1910	Montgomery Ward and Company offered employees an insured plan regarded as the first group health insurance policy.
1929	A group of Dallas teachers arranged with Baylor University Hospital to provide room and board and specified ancillary services at a predetermined monthly cost; considered the forerunner of Blue Cross insurance.
1932	First city-wide Blue Cross plan offered by a group of Sacramento hospitals.
1937	The Blue Cross Commission was organized.
1939	The first Blue Shield plan developed.
1940s	During WW II, due to the freezing of wages, group health insurance became an important component of collective bargaining for employees.
1949	Major medical expense benefits were introduced by Liberty Mutual to supplement basic medical care expenses.
1959	Continental Casualty Company issued the first comprehensive group dental plan written by an insurance company.
1964	Prescription drug expense benefits were introduced.
1966	Medicare and Medicaid become law.
1972	Medicare extended to disabled and end-stage renal disease patients.
1973	Health Maintenance Organization Act passed by Congress.
1974	ERISA passed regulating provision of employee benefit plans, including health insurance.
1988	Medicare Catastrophic Care Act passed (repealed the next year).
1996	Health Insurance Portability and Accountability Act (HIPAA) passed.
1997	State Children's Health Insurance Program (SCHIP) initiated.
2003	Medicare Modernization Act (MMA) passed.
2010	Patient Protection and Affordable Care Act (ACA) passed.

Source: *Source Book of Health Insurance Data, 1990*, Health Insurance Association of America.

Market for Health Insurance

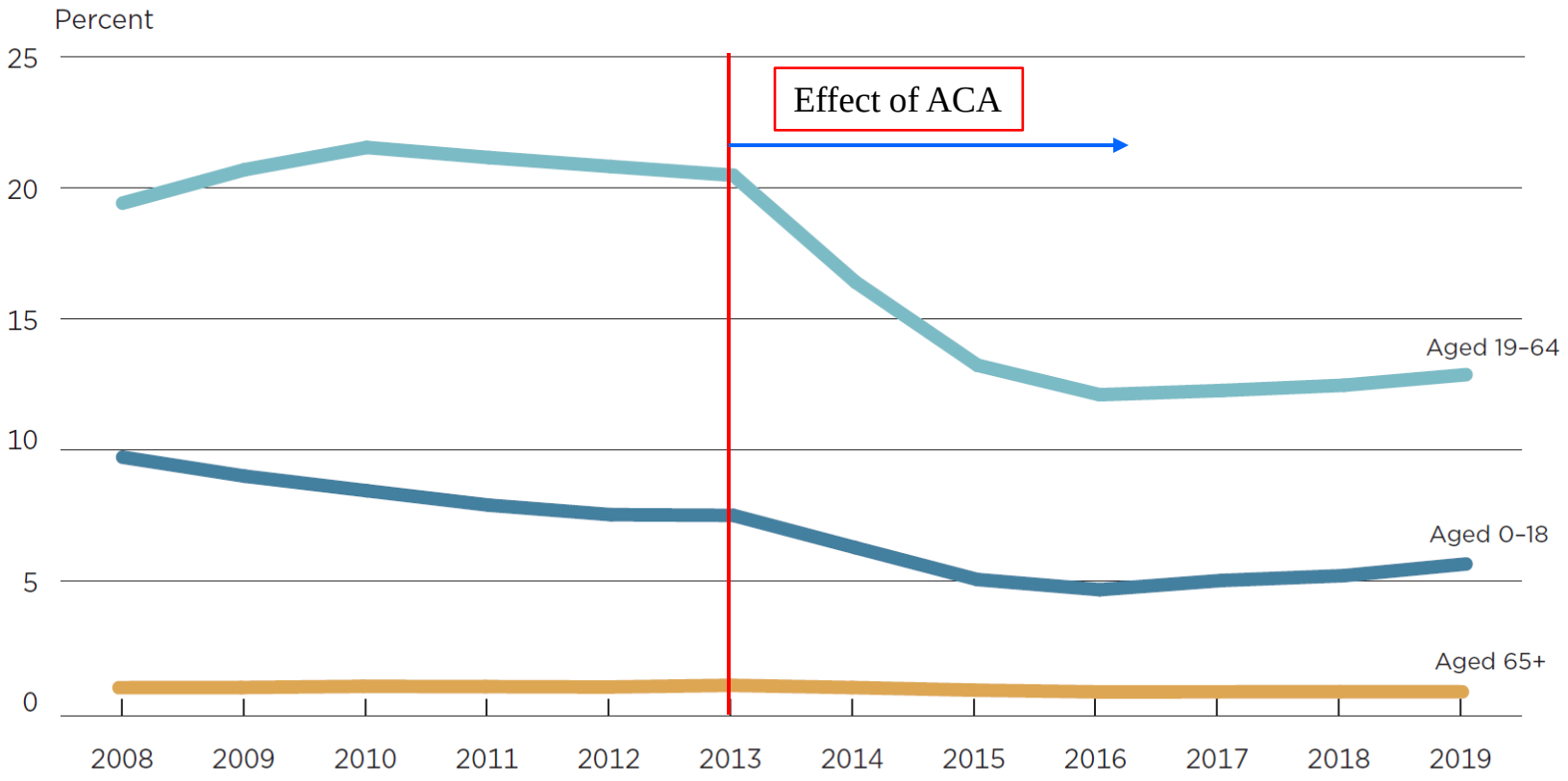
- A health insurance crisis?
- The percentage of population without insurance stayed roughly the same over many years at 15-16% of the population
- ACA reform expanded coverage (approx. numbers)
  - 2013: 13.3% uninsured
  - 2015: 9.1%
  - 2017: 8.5%
  - 2019: 8.0%
  - 2021: 8.3%

Market for Health Insurance



Market for Health Insurance

Percentage of People Without Health Insurance Coverage by Age: 2008 to 2019
(Civilian noninstitutionalized population)



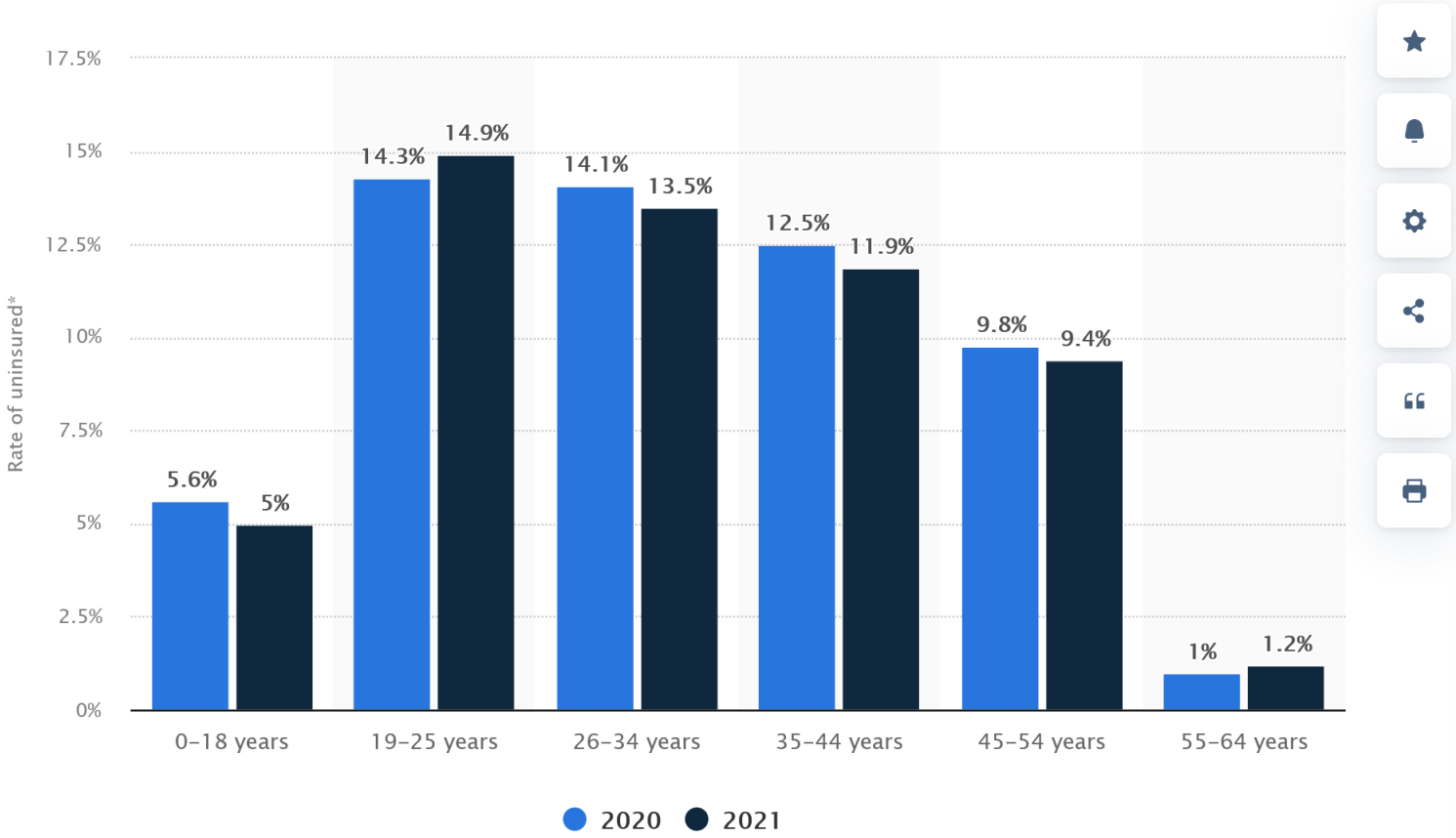
Note: Estimates reflect the population as of July of the calendar year. For information on confidentiality protection, sampling error, nonsampling error, and definitions in the American Community Survey, see <https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf>.
Source: U.S. Census Bureau, 2008 to 2019 American Community Surveys (ACS), 1-Year Estimates.

Interesting observations?

Source: https://www.census.gov/library/publications/2020/demo/p60-271.html

Market for Health Insurance

Percent of non-elderly uninsured by age



Additional Information

Show source

Types of Health Insurance

- **Public/Social Insurance**
  - Medicaid (lower income, and eligibility)
  - Medicare (age 65+, and eligibility)

- **Commercial**
  - Employer based mechanisms
  - Blue Cross, Aetna, United Health, etc.
  - HMOs, PPO, etc.

- **What an individual may buy (e.g., if self-employed)**
  - Companies above offer such plans

Health Insurance Providers

- Commercial insurance carriers
- Managed care organizations
- About 90% of civilian population under 65 has hospital or surgical insurance, or both
- About 65%-70% of Medicare recipients (age 65 or older) carry supplemental coverage
- Currently just under 10% of population is uninsured
  - Earlier it was as high as 16-18%

Private Insurance Demand

- Traditional indemnity insurance contracts
  - Term life insurance, Property-casualty
- Health insurance similar to these
  - Early policies paid a specific amount for a broken leg or severed limb!!
- But problems in applying concept to health
  - Verification of seriousness of health event
  - Wide variation in cost of treatment
  - Led to development of service-benefit policy, which covers billed expenses

Theory of Risk and Insurance

- People enter into insurance contracts to share the uncertainty of financial risk
- When combined in a large enough group, the probability that someone in the group will become ill can be systematically estimated
- Attitudes toward risk shown by a diminishing marginal utility of income, measuring the rate of change of the total utility of income

Health Insurance and Market Failure

- Dominant feature is reliance on third-party payment
- Emergence of health insurance as an employment-based, tax-free benefit has expanded coverage to medical services that normally would not be covered if insurance were purchased individually
  - Result: A strong incentive for overconsumption
- Providers have less incentive to provide care efficiently, which limits competition, raises costs, and lowers the quality of services

Information Problems

- Most challenging problems that arise because of costly information are due to unequal access to information

- Several issues arise when information not distributed equally
  - Consumer information problems
  - **Moral hazard**
  - **Adverse selection**

Consumer Information Problems

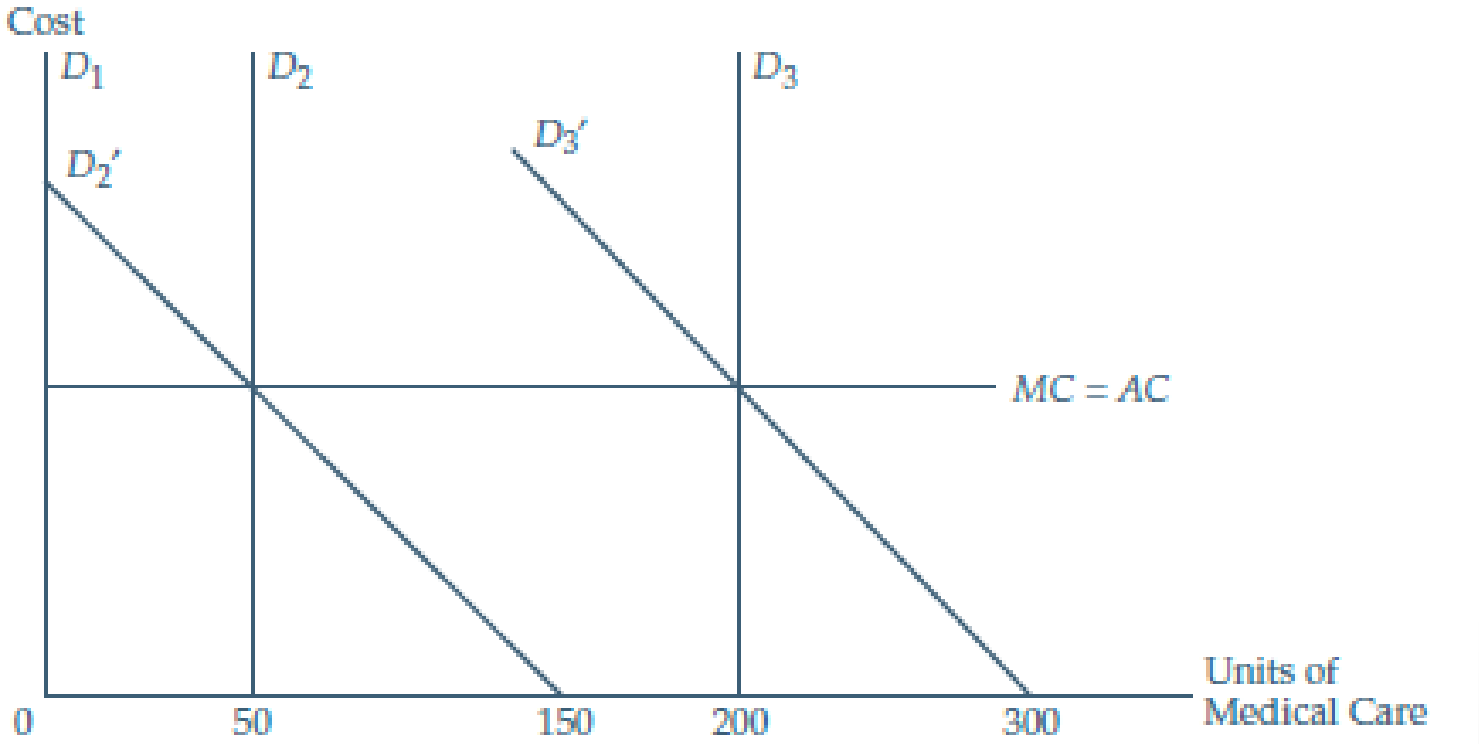
- For a market to work, consumers must behave rationally, have income to spend, and know their own preferences
- When they have trouble gathering and understanding information, their ability to make informed decisions is compromised
- Quality of information in health care markets is poor, difficult to understand
- Decision making requires that consumers know the prices paid for the products and services they buy

Economics of Moral Hazard

- ***Moral hazard*** occurs anytime there is an opportunity to gain from acting differently from the implied principles of a contract
- Because private actions are hidden from view, both parties have an opportunity to gain from unpredictable behavior
- If a consumer has health insurance:
  - Increase in the likelihood of purchasing potentially unnecessary medical services
  - Induces overconsumption in general
  - Induces higher spending in the event of illness

Moral Hazard and Demand for Medical Care

We will do a variant of this in class with details.



Economics of Adverse Selection

- ***Adverse Selection*** arises because people have more information about expected medical expenditures than insurance companies may, and find ways to try and conceal it
- Insurer may have difficulty identifying prospective risk and charging premiums that reflect risk
- Too many high-risk users in insured pool results in an unrepresentative risk-pool
  - This causes health insurance premiums rise
  - Part of reason why insurance premiums trended up after ACA
  - Low-risk users may drop out to seek cheaper coverage, or go uninsured if given choice

Insurers' Response to Information Problems

- Deductibles (consumer must pay $1,000-$6,350 before coverage begins)
- Coinsurance (consumer pays 10-20% of each claim)
- Insurer's response to *adverse selection*
  - Underwrite only prospective risk (not pre-existing conditions)
  - Refuse to insure known ailments
- ACA allowed individuals with existing risk to be insured
  - Part of reason why ACA resulted in higher premiums

Optimal Insurance Plan

- Balances the benefits of greater risk sharing with the costs of moral hazard
- Make people responsible for more of their own care
- Requires higher deductibles and larger copays
  - E.g.: higher copays for more expensive biopharma
- Pools high-risk people into pools with other high-risk people, and charges premiums to reflect that risk
  - But this is not allowed in group/employer-based policies
  - ACA eliminated much of this

Medical Care for the Uninsured

- Recent estimates of number of uninsured Americans
  - Between 25-30 million

- Most are working poor and their dependents
  - Prior to passage of ACA, many earned too much to qualify for Medicaid
  - 2014: Rule change standardized Medicaid eligibility to include those who make less than 138% of the federal poverty level
    - 2020: Federal poverty level approx. $26,500.

Medical Care for the Uninsured – NYS

What is New York Medicaid?

Medicaid is a program for New Yorkers who can't afford to pay for medical care. Medicaid pays for a number of services, but some may not be covered for you because of your age, financial circumstances, family situation, transfer of resource requirements, or living arrangements. Some services have small co-payments. These services may be provided using your Medicaid card or through your manag

See more

Who is eligible for New York Medicaid?

To be eligible for New York Medicaid, you must be a resident of the state of New York, a U.S. national, citizen, permanent resident, or legal alien, in need of health care/insurance assistance, whose financial situation would be characterized as low income or very low income. You must also be one of the following:

- Pregnant, or
- Be responsible for a child 18 years of age or younger, or
- Blind, or
- Have a disability or a family member in your household with a disability, or
- Be 65 years of age or older.

To be eligible, you must have an annual household income (before taxes) that is below the following amounts:

Select Household Size ▾ | Maximum Household Income per year | Hide Table ^

Annual Household Income Limits (before taxes)

Household Size*	Maximum Income Level (Per Year)
1	$17,131
2	$23,169
3	$29,207
4	$35,245
5	$41,284
6	$47,322
7	$53,360
8	$59,398

*For households with more than eight people, add $6,038 per additional person. Always check with the appropriate managing agency to ensure the most accurate guidelines.

NYS Medicaid website
https://www.benefits.gov/benefit/1637

Individuals without Health Insurance

TABLE 6.2 INDIVIDUALS WITHOUT HEALTH INSURANCE BY SELECTED CHARACTERISTICS, 2012, 2011, AND 2004

Group	2012 Uninsured (000)	2012 Percentage of Group	2012 Percentage of Total	2011 Uninsured (000)	2011 Percentage of Group	2011 Percentage of Total	2004 Uninsured (000)	2004 Percentage of Group	2004 Percentage of Total
All Persons	47,951	15.4	100.0	48,613	15.7	100.0	45,820	15.7	100.0
American Citizen	38,449	13.4	80.2	38,867	13.6	80.0	36,279	13.5	79.2
Nativity:									
Native	35,127	13.0	73.2	35,436	13.2	72.9	33,962	13.3	74.1
Naturalized Citizen	3,322	18.3	6.9	3,431	19.1	7.1	2,317	17.2	5.1
Non-Citizen	9,502	43.4	19.8	9,746	44.2	20.0	9,542	44.1	20.8
Age:									
Under 19 years	7,193	9.2	15.0	7,634	9.7	15.7	8,269	11.2	18.0
19 to 25 years	8,205	27.2	17.1	8,272	27.7	17.0	8,772	31.4	19.1
26 to 34 years	10,228	27.2	21.3	10,237	27.5	21.1	10,177	25.9	22.2
35 to 44 years	8,428	21.1	17.6	8,399	21.0	17.3	8,110	18.7	17.7
45 to 64 years	13,257	16.2	27.6	13,382	16.3	27.5	10,196	14.3	22.3
65 years and over	639	1.5	1.3	690	1.7	1.4	297	0.8	0.6
Income:									
Less than $25,000	14,081	24.9	29.4	14,825	25.4	30.5	15,102	24.3	33.0
$25,000 to $49,999	15,160	21.4	31.6	15,493	21.5	31.9	14,782	20.0	32.3
$50,000 to $74,999	8,619	15.0	17.9	8,825	15.4	18.2	7,842	13.3	17.1
Over $75,000	10,090	7.9	21.0	9,470	7.8	19.5	8,092	8.4	17.7
Race:									
White, Non-Hispanic	21,585	11.1	45.0	21,681	11.1	44.6	21,983	11.3	48.0
Black	7,629	19.0	15.9	7,722	19.5	15.9	7,186	19.7	15.7
Asian	2,477	15.1	5.2	2,696	16.8	5.5	2,070	16.8	4.5
Hispanic origin	15,500	29.1	32.3	15,776	30.1	32.5	13,678	32.7	29.9

Source: United States Census Bureau, *Income, Poverty, and Health Coverage in the United States*, 2004 and 2012.

Interesting observations?

Safety Net for the Uninsured

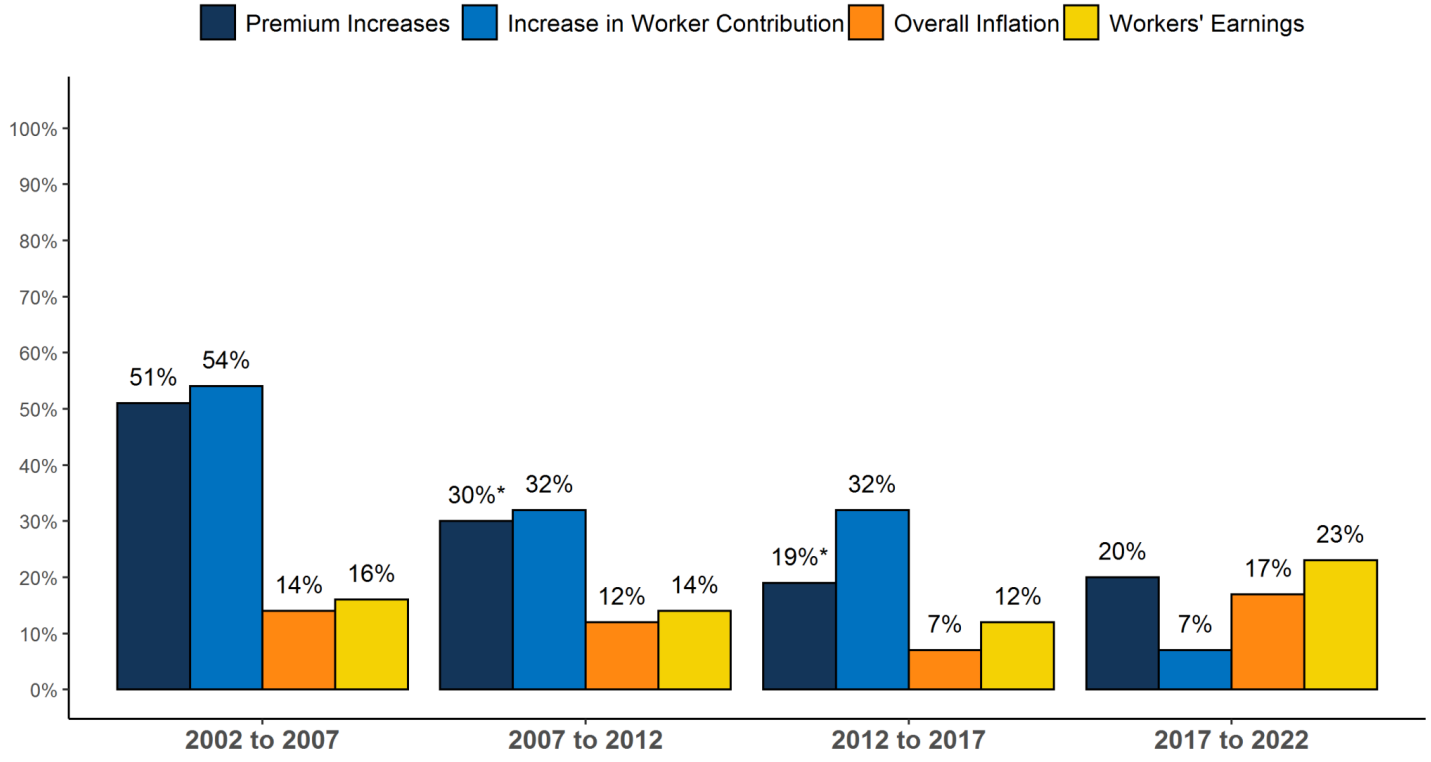
- Since 1985, it has been illegal for a hospital emergency department to deny care to anyone requesting it
- The hospital must provide medically appropriate screening, and then treat or “stabilize” and transfer to a facility can treat
- Most of this care is financed from Medicaid subsidies, or Medicare, or local municipal budgets
- Universal coverage requires accepting the principles of subsidization

Health Insurance, Costs, and Pharma Data

- In the slides that follow I have added data that help understand some of the issues related to overall affordability, and challenges with biopharmaceuticals

Health Data: Insurance

Figure C
Cumulative Premium Increases, Inflation, and Earnings for Covered Workers with Family Coverage, 2002-2022

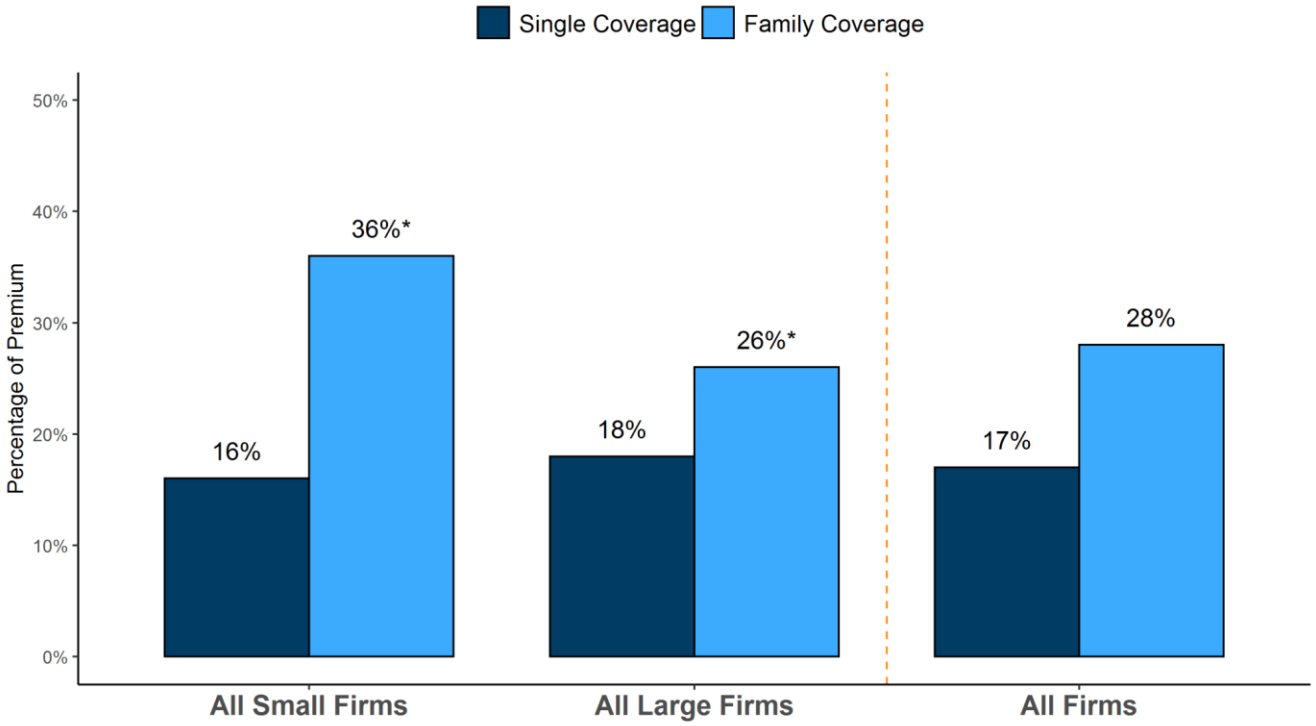


* Percentage change in family premium is statistically different from previous five year period shown ($p < .05$).
SOURCE: KFF Employer Health Benefits Survey, 2018-2022; Kaiser/HRET Survey of Employer-Sponsored Health Benefits, 2002-2017. Bureau of Labor Statistics, Consumer Price Index, U.S. City Average of Annual Inflation, 2002-2022; Bureau of Labor Statistics, Seasonally Adjusted Data from the Current Employment Statistics Survey, 2002-2022.

Source: https://www.kff.org/report-section/ehbs-2022-summary-of-findings/attachment/figure-c-34/

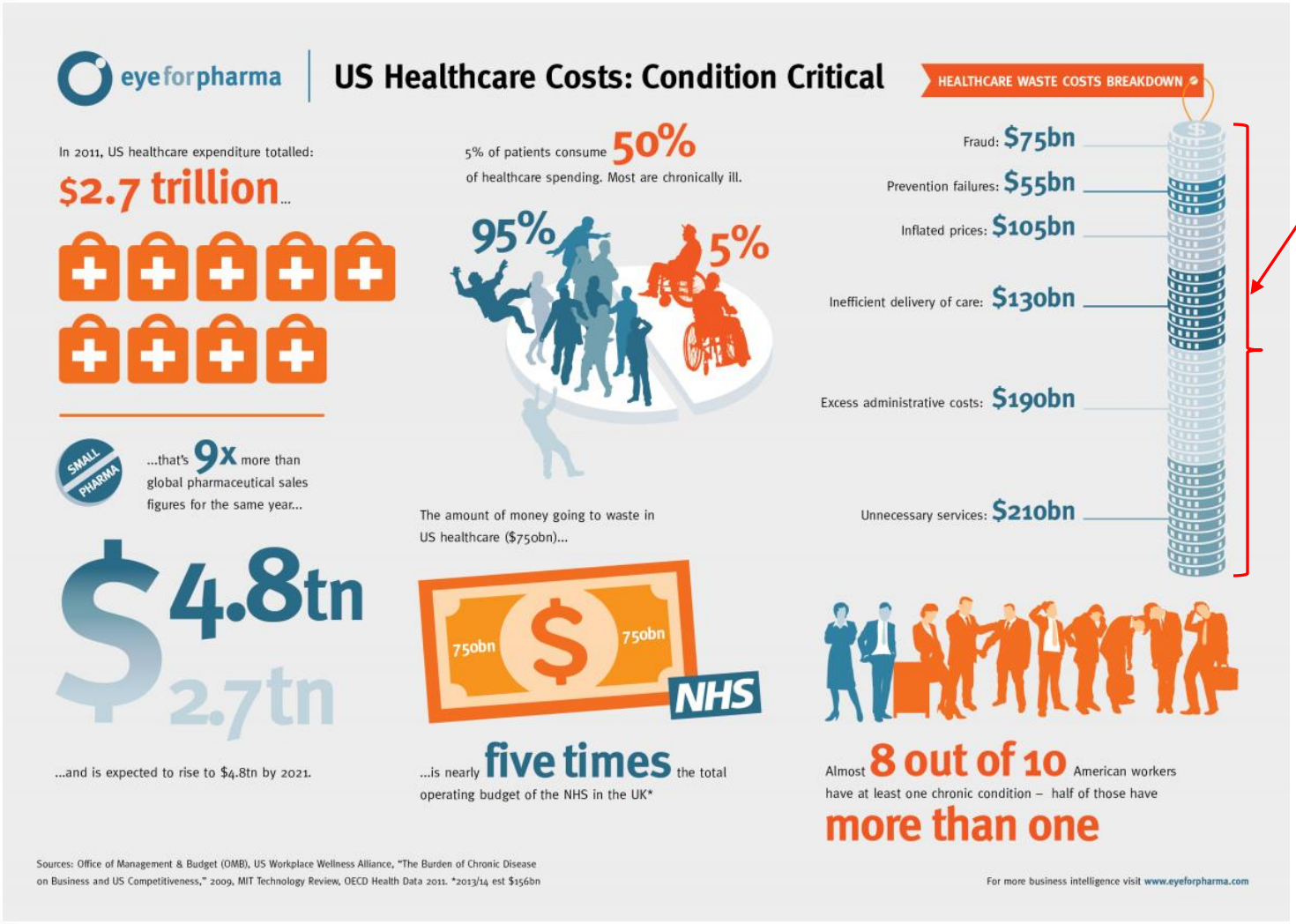
Health Data: Insurance

Figure 6.2
Average Percentage of Premium Paid by Covered Workers for Single and Family Coverage, by Firm Size, 2022



* Estimate is statistically different between All Small Firms and All Large Firms within coverage type ($p < .05$).
NOTE: Small Firms have 3-199 workers and Large Firms have 200 or more workers.
SOURCE: KFF Employer Health Benefits Survey, 2022

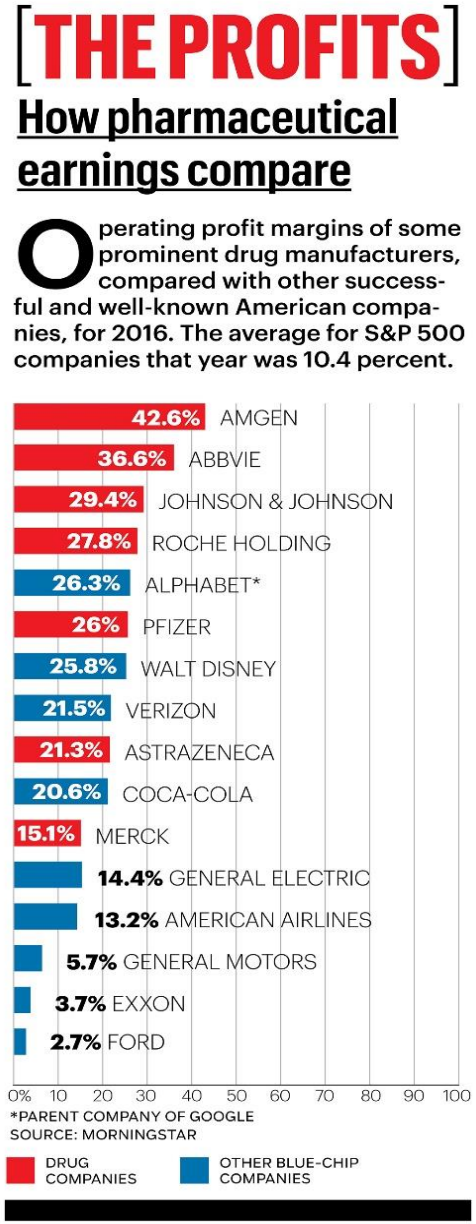
Health Data: Inefficiencies and Pharma



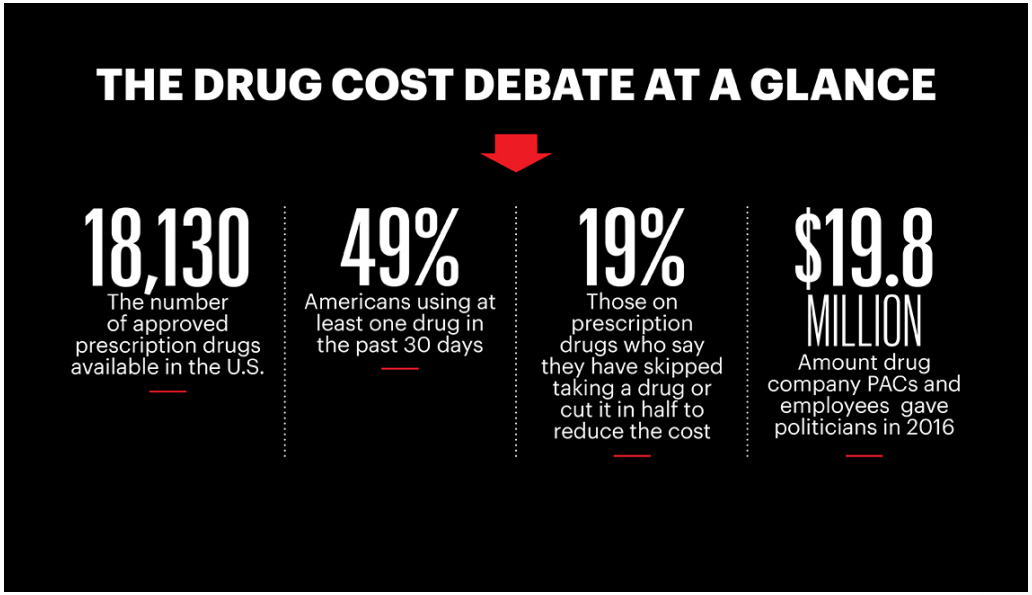
Perspective on potential inefficiencies and scope for improvement

https://social.eyeforpharma.com/commercial/cost-conundrum-pharmas-role-us-healthcare-infographic

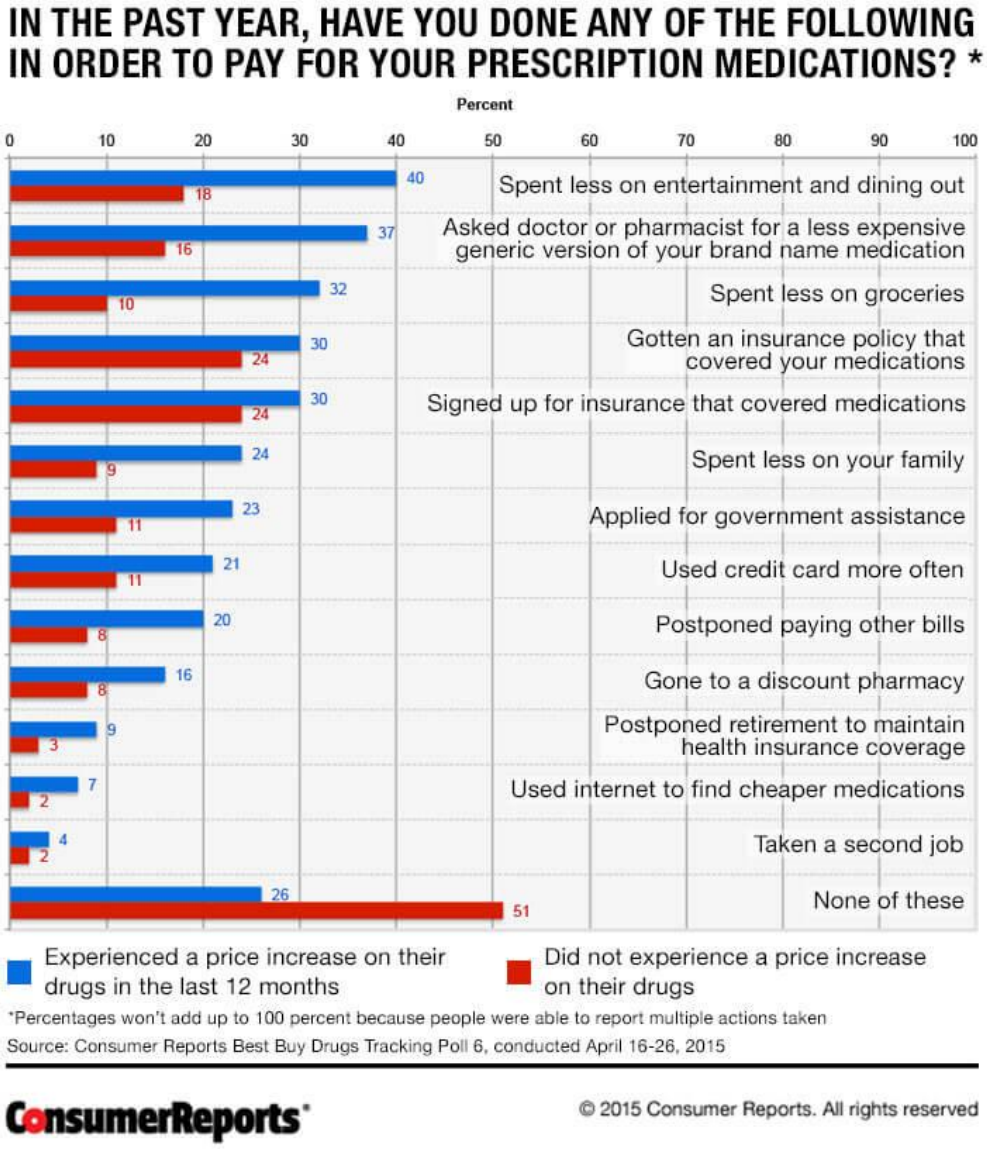
Health Data: Pharma Profit Margins



https://www.aarp.org/health/drugs-supplements/info-2017/rx-prescription-drug-pricing.html



Health Data: Pharma Costs



https://blog.transparentrx.com/2016/02/employers-take-aim-to-curb-high-cost-of.html

Pharmacy is 20% of employer-sponsored medical benefits. But is increasing at a rate that is 50% of medical cost inflation

Price, utilization and delivery of specialty prescription drugs are top concern for employers

Specialty drugs driving up cost include treatments for cancer, arthritis, inflammatory conditions