

# Introduction

## ACA Health Insurance and Pharmaceutical Industry

Why do we always hear people compare the United States and other countries health care system? Health insurance in the United States is always a problem governments and communities face. Compared to other countries, the U.S. does not have the flexibility and accessibility of the health care system for all citizens. Many Americans are paying out-of-pocket to access into medical system and some have no access. President Obama took this community challenge seriously and passed two laws to make a change in the healthcare system.

The Affordable Care Act (ACA) is the name for the comprehensive health care reform law and its amendments which addresses health insurance coverage, health care costs, and preventive care, also known as Obama care. Two laws significantly affect American health insurance: The Patient Protection and Affordable Care Act. Both laws are passed by President Barack Obama on March 23, 2010, and were amended by the Health Care and Education Reconciliation Act on March 30, 2010.

However, ACA was not as successful as planned. According to [American Action Forum](#), ACA directly increased drug manufacturers' costs by imposed a new tax on pharmaceutical companies based on the sales revenue of a company's brand-name drug sales. In otherword, overall net prescription drug price decrease but brand-name prescription drug price increased. This new tax on brand-name drug sales cost the industry \$14.1 billion between 2011 and 2015. ACA expanded Medicaid coverage for about 13 million American, forcing people to have health insurance and required high income household to pay taxes to cover the costs of health care results increases premiums and out-of-pocket expenses for families annually.

## Price Changes

Paying medical bills out-of-pocket truly hurts middle to low income family, to the point, many Americans refuse to go to hospital unless they have to. These out-of-pocket expenses are not only prescription drug costs but includes deductibles, co-pays, and anything insurance did not cover. Co-pays sometimes lead to over \$30 to \$50 and due to high demand in prescription drug for rare diseases and uncommon individual conditions have all experienced significant price



Figure 1: ACA

increases year after year. These conditions have lead to extreme decreases in prescription drug consumption and increase the chance of death that could be avoided.

High prescription drug prices have created affordability challenges for patients and the health care system. [The Office of the Assistant Secretary for Planning and Evaluation \(ASPE\)](#) conduct the research of price increases for prescription drug to see the changes over the time. In 2022, there were significant price increases for many drugs, with the average increase in January being nearly \$150 per drug (10 percent) and \$250 (7.8 percent) in July. Some drugs saw price hikes over \$20,000 or more than 500 percent. Additionally, 1216 products had price increases exceeding the 8.5 percent inflation rate from July 2021 to July 2022, with an average increase of 31.6 percent. Statistic show the ACA does not affect overall economy possibly which is why we want to analyze that for sale tackle industry and possibly predict the future price.

## **Pharmaceutical Companies**

Meanwhile, as the American public suffers under the increasing prescription drug costs to even life saving medicine, massive pharmaceutical companies like Pfizer and Johnson & Johnson whose known one of the few companies provided Covid-10 vaccinations, are seeing record

profits annually. According to the [Center of American Progress](#) (CAP), increasing prices on its most-prescribed medications by anywhere from 40 percent to 71 percent from 2011 to 2015.

In this project, I will be using methods of data gathering, data cleaning, clustering, dimensionality reduction, decision trees include classification and regression, and ARM in Python to focus the pharmaceutical industry changes and medicaid health insurance changes over ACA.

To explore the effect and impact by ACA across the nation, the following questions will be answered in this research. Each question will be addressed and answered with the backing of data throughout the project and in the conclusion with examples.

### **Questions to Explore**

1. How did the ACA impact the pricing and accessibilities of prescription drugs in the United States?
2. Have there been any significant changes related to drug pricing and the pharmaceutical industry since the ACA was passed?
3. Has the pharmaceutical industry shown increasing profits since the ACA was established?
4. Are there certain times of the year in which Americans may experience heightened drug costs?
5. Does changes in pharmaceutical industry by ACA effect the death rate in the United States?
6. What kind of connection can be drawn between the increased profitability of the U.S. pharmaceutical industry and rising out-of-pocket prescription drug costs for consumers?
7. Can we predict the future prescription drug cost and out-of-pocket?
8. Did the ACA successfully strike a balance between expanding healthcare coverage and addressing concerns about rising drug costs?
9. How does the ACA become a controversial topic?
10. What lessons can be learned from the ACA's interaction with the pharmaceutical industry for future healthcare policy initiatives?