

Policy Brief

The Share of Health Care Spending Growth Attributable to Rx

Tomas J. Philipson

Qi Zhao

Deyu Zhang

Shumaila Abbasi

Dagny Bingham

The University of Chicago

The Initiative on Enabling Choice and Competition in Healthcare

Abstract

Prescription drugs have drawn significant policy and public attention in discussions of rising health care costs in the United States. However, their actual contribution to the growth of total health care spending remains uncertain. Drawing on data from the National Health Expenditure Accounts and supplementary sources, this paper examines both overall and biopharmaceutical spending trends and evaluates the extent to which prescription drugs have driven expenditure growth over time. We find that while total health care spending has grown steadily over the past nine years, prescription drug spending has increased at a more moderate pace, and its contribution to real health care spending growth fluctuated considerably. Between 2016 and 2024, prescription drugs accounted for an average of 14.3 percent of annual growth. Our analysis finds that, over the same period, the remaining vast majority of health care cost growth comes from non-drug spending — primarily hospitals and physician services. These results indicate that although prescription drugs are an important component of the health care system, they are a very small source of long-term spending growth. We find that even freezing the growth in drug costs to zero would reduce total cost growth by 13.7%, leaving national health spending to continue to rise by \$240.6 billion a year. Meanwhile, freezing hospital and physician spending together could reduce cost growth by 46.7%. These findings indicate that policy efforts narrowly focused on drug pricing are unlikely to achieve meaningful containment of overall health care spending absent complementary reforms targeting hospital and physician services.

Keyword: Prescription Drugs, Health Care Spending, Cost Decomposition

Section 1: Introduction

The sustained growth of health care spending in the United States has sparked ongoing scholarly and policy debates over its causes and consequences. From 1970 to the present, health care expenditures have grown from less than 5% of GDP to nearly 18% in 2023 (McGough et al., 2024), prompting concerns about affordability, fiscal sustainability, and economic efficiency (Pritchard et al., 2016, Martin et al., 2025). Identifying the major contributors to this growth is essential not only for accurate public discourse but also for designing effective cost containment strategies.

Prescription drug (Rx) spending has received significant political and media attention in recent years. High-profile cases involving the cost of specialty drugs, oncology treatments, and gene therapies have contributed to the widespread belief that Rx is one of the main contributors to health care cost escalation (Kesselheim et al., 2016, American Academy of Actuaries, 2018). Legislative activities, including Congressional hearings and regulatory proposals, as well as the passage of drug-pricing and cost-sharing reforms as part of the Inflation Reduction Act, reflect the prominence of drug pricing in the policy arena.

However, a growing body of empirical research challenges this narrative, calling into question the effectiveness of reforms focused narrowly on prescription drugs. While nominal drug spending has increased, its share of total health expenditure has remained relatively stable, typically ranging around 14 percent over the past two decades (CBO, 2022). Moreover, when adjusted for demographic changes and technological innovation, the contribution of Rx to overall health care spending growth appears smaller than that of other sectors such as hospital care, physician services, or long-term care (Reinhardt et al., 2004, Lee et al., 2021).

This paper aims to provide a systematic analysis of the role that prescription drugs play in driving health care spending growth in the United States. Using national health accounts as the primary data sources, with Altarum's estimation for non-retail prescription drug spending as a supplement, we examine both historical spending levels and growth rates. We then conduct a decomposition analysis that attributes the aggregate growth in health care spending to key categories, including hospital care, physician and clinical services, and prescription drugs. This approach allows us to quantify the relative contribution of Rx to overall spending growth.

We observe that, between 2016 and 2024, prescription drugs accounted for an average of 14.3% of the annual growth in national health care expenditures (NHE). Over the same period, the vast majority of health care cost growth thereby stemmed from non-drug spending — primarily hospitals and physician services. We find that freezing drug spending with zero growth going forward would reduce total cost growth by only 13.7%, leaving national health spending to continue to rise by \$240.6 billion a year. Meanwhile, freezing hospital and physician spending together could reduce cost growth by 46.7%.

Ultimately, this analysis contributes to a more evidence-based understanding of the drivers of health care spending growth and supports better-informed policymaking to tackle cost growth

drivers in an era of tightening fiscal constraints. Our analysis suggests that policy efforts narrowly focused on drug pricing are unlikely to achieve meaningful containment of overall health care spending absent complementary reforms targeting hospital and physician services.

Section 2: Analysis of Health Care Spending Historical Trends

2.1 Data Preparation

In this study, we primarily rely on the Centers for Medicare & Medicaid Services (CMS) National Health Expenditure Accounts (NHEA) for overall spending categories from 2016 to 2024¹, including expenditure types such as hospital care, physician and clinical services, and prescription drugs.

In the NHEA, the “Prescription Drugs” category reflects only retail purchases (e.g., through pharmacies). By contrast, non-retail prescription drug spending (i.e., drugs administered by a provider such as by infusion or injection) is embedded within the broader health care service categories (e.g., hospital care, physician and clinical services). According to Altarum’s data from 2018 to 2020, non-retail drug spending was distributed across service categories as shown in Table 1.

Table 1: Distribution of Non-retail Prescription Drugs Spending

Spending Category	Share
Hospital Care	52%
Physician and Clinical Services	33%
Nursing Care	10%
Home Health Care	5%

To precisely capture prescription drug spending, including both retail and non-retail sectors, we use Altarum’s estimates for non-retail prescription spending from 2016 to 2024, and its shares by category to reallocate expenditures within the NHEA. We add non-retail spending to the “Prescription Drugs” category and subtract the corresponding amounts from the four service categories: Hospital Care, Physician and Clinical Service, Nursing Care, and Home Health Care. This reclassification approach ensures that prescription drug spending is comprehensively measured.

2.2 Historical Trend Analysis

Figure 1 presents the trajectory of national health expenditures (NHE) in blue and their annual growth in red between 2016 and 2024. Over this period, overall spending rose steadily from

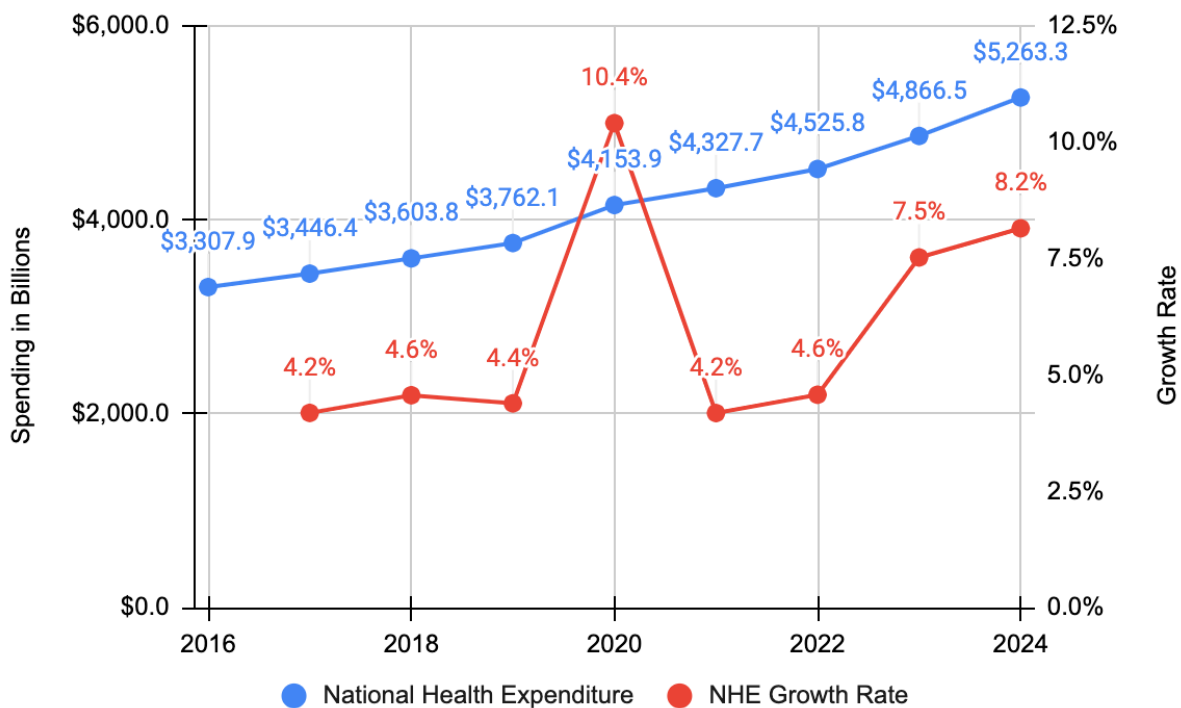
¹ Specifically, the data in 2024 is projection

\$3.3 trillion in 2016 to more than \$5.2 trillion in 2024, representing a sustained upward trend in health care costs.

The growth rate of NHE, however, displayed more volatility. Between 2016 and 2019, growth fluctuated modestly in the range of 4.2 – 4.6 percent per year. A sharp spike occurred in 2020, when spending growth accelerated to 10.4 percent, largely reflecting the COVID-19 pandemic’s extraordinary effects on health service utilization, emergency funding, and related expenditures. After this peak, growth dropped back to 4.2 percent in 2021, indicating a temporary normalization, but then rose again in subsequent years – 7.5 percent in 2023 and 8.2 percent in 2024 – as post-pandemic recovery and inflationary pressures pushed costs upward.

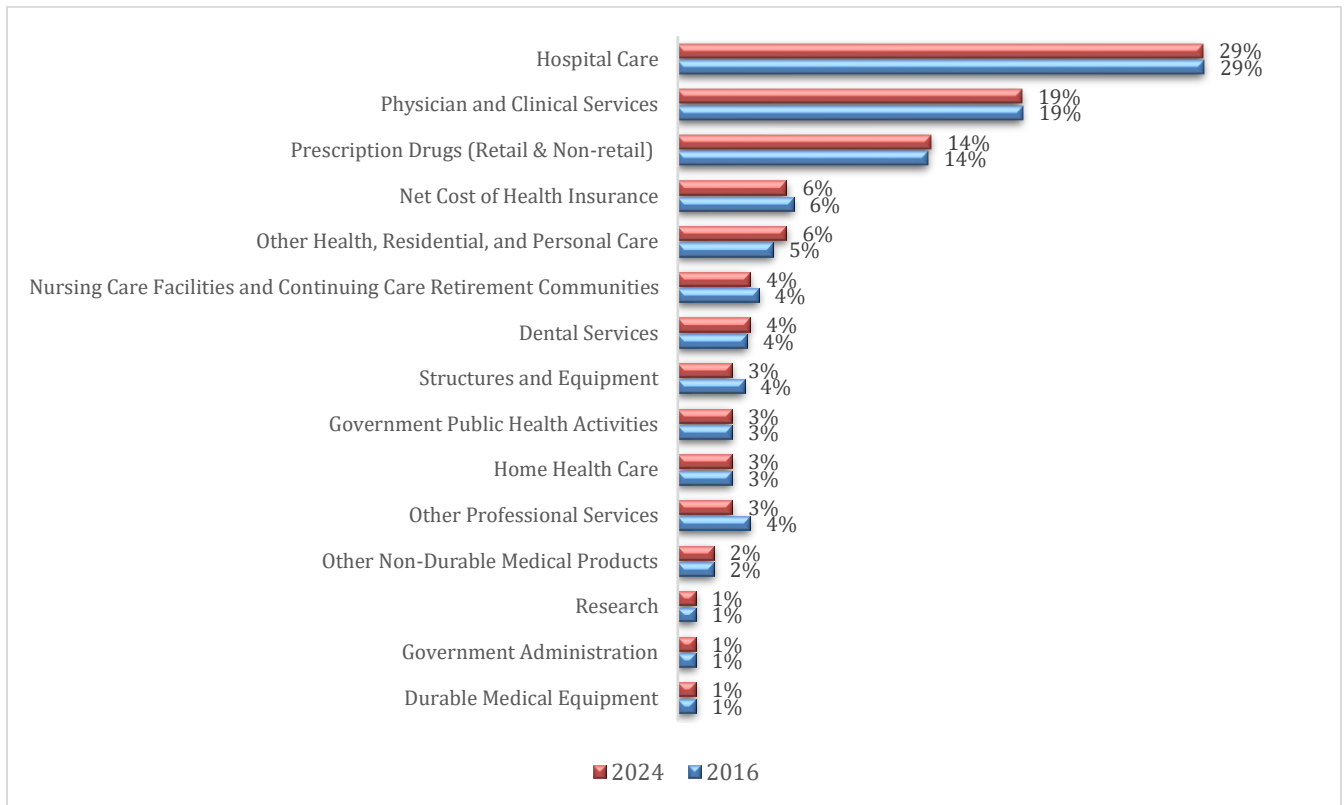
Taken together, the historical data highlight two key points: first, national health expenditures continue to grow at a substantial pace even outside of extraordinary shocks; second, the volatility in recent years underscores the sensitivity of spending growth to macroeconomic conditions and health system disruptions. These dynamics provide important context for evaluating the relative contribution of prescription drug spending compared to other major components of health care.

Figure 1: National Health Expenditures and Growth Rates from 2016 to 2024



Despite fluctuations in the NHE growth rate over the sampled period, the composition of U.S. health care spending has remained relatively stable, as shown in Figure 2. The three largest categories are consistently hospital care, accounting for about 29% of expenditures, followed by physician and clinical services at approximately 19%, and prescription drugs, which represent roughly 14% of total health care spending.

Figure 2: Distribution of National Health Expenditure in 2016 and 2024

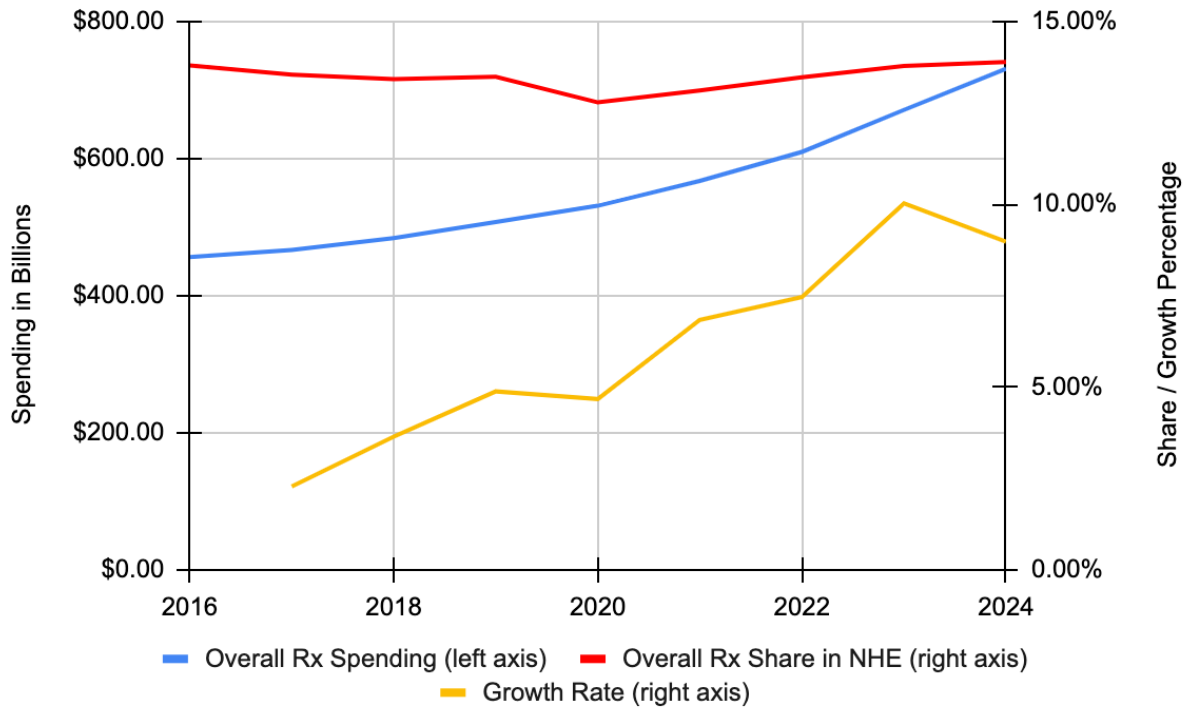


Section 3: Historical Levels and Growth Rates in Prescription Drug Spending

Prescription drugs are a critical component of modern health care, offering treatments for chronic conditions, infectious diseases, and emerging health threats. Its spending refers to national expenditures on prescription medications, including both traditional small-molecule drugs and newer biologic therapies. While drug costs receive outsized attention in policy debates, they consistently account for a relatively modest share of total healthcare spending. In this section, we examine prescription drugs’ historical trends in share, spending, and growth rates, drawing on data from the National Health Expenditure Accounts (NHEA).

Figure 3 illustrates national prescription drug spending (including both retail and non-retail) and its share in the NHE and annual growth rates from 2016 to 2024. Over the past 9 years, overall drug spending has risen steadily from \$456.3 billion to \$730.9 billion. During this period, the growth rate of prescription drug spending slightly exceeded 10% only in 2023, though it has been increasing. Then, it fell back to about 9% in 2024. While overall spending increased, much of that growth occurred at a relatively modest pace, contrary to the perception that drug costs are exploding.

Figure 3: Prescription Drug Spending (Retail and Non-retail), Share in NHE, and Growth Rates from 2016 to 2024



Although recent growth is notable, prescription drugs, including both retail and non-retail, still account for only about 14% of total health care spending. This suggests that even sustained growth in biopharmaceutical spending contributes modestly to overall health care cost increases. The hypothesis will be examined more formally through decomposition in Section 4.

Section 4: Decomposition of Health Care Spending Growth by Type

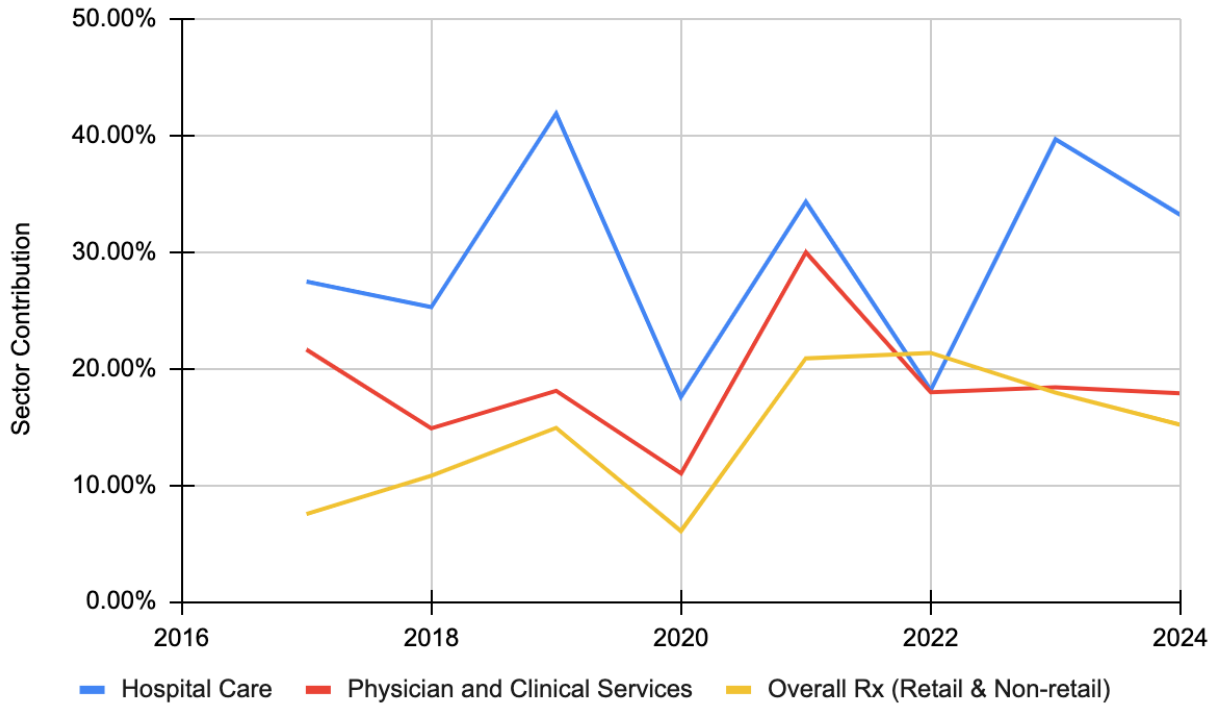
To evaluate the contribution of prescription drugs to overall health spending growth, we separate the spending by type. In this section, we focus on three types of expenditure: hospital care, physician and clinical services, and overall prescription drugs. We divided the growth of those expenditures by the total growth of national health expenditure. The formulas are as follows:

$$Contribution_{Type\ i} = \frac{\Delta E_{Type\ i}}{\Delta E_{NHE}} \times 100\%$$

This formulation yields three percentage shares that represent contributions of different types of expenditures to total health spending growth. The result is depicted in Figure 4. The yellow and red lines show the contribution of overall prescription drugs to annual national health expenditure (NHE) growth. The blue line indicates the contribution of hospital care, while the red line represents physician and clinical service. According to the results shown, the contribution of overall prescription drugs only exceeded that of the other two types in 2022. Among the overall prescription drugs, the retail Rx contribution varies considerably across years,

ranging from 2% to 15%, while that of non-retail Rx remains relatively stable at around 5%. Meanwhile, the hospital care and physician service have been the major contributors, usually accounting for about 50% of the NHE growth together.

Figure 4: Contribution Shares of National Health Spending by Type from 2016 to 2024



These findings suggest that concerns over rising pharmaceutical costs, though not unfounded, should be interpreted within the broader context of total system expenditures. The continued predominance of hospital and physician spending highlights the need for balanced policy attention across sectors.

Section 5: Impact of Eliminating Growth of Drug Spending on Growth of Overall Health Spending

A central objective of recent policy initiatives, including drug-pricing and cost-sharing reforms in the Inflation Reduction Act and more recent legislative proposals for prescription drug price controls, is to reduce the growth rate of prescription drug spending as a means to control overall national health expenditures. However, given that Rx accounts for a relatively small share of total spending—approximately 14% – it is important to assess the extent to which slowing Rx growth alone can influence the trajectory of aggregate health spending.

To quantify this effect, we simulate a counterfactual scenario where the growth rate of prescription drug spending (including both retail and non-retail) is reduced to zero, while non-Rx

health spending continues to grow at its historical rate. This approach allows us to isolate the marginal impact of Rx spending on NHE growth.

To capture the long-term annual growth rates of health spending for different types, we calculate the Compound Annual Growth Rate (CAGR) for the selected expenditure types over the historical period from 2016 to 2024. CAGR is preferred over simple arithmetic averages because it smooths year-to-year fluctuations and better reflects the persistent annual growth rate required to achieve the observed change from the base year to the terminal year. Its formula is as follows:

$$CAGR = \left(\frac{Value_{end}}{Value_{start}} \right)^{\frac{1}{n}} - 1$$

where n is the number of years covered by the historical period.

We then compute the arithmetic average shares by expenditure type in the NHE over the historical period from 2016 to 2024. Therefore, we can estimate the growth rate of NHE by weighting the CAGR of all types by their shares:

$$CAGR_{NHE} = \sum_{i=1}^5 \text{Share in NHE of Type } i \cdot \text{CAGR of Type } i$$

Based on the data from the NHE data, we estimate the shares in NHE and CAGRs by expenditure types as shown in Table 2:

Table 2: Shares in NHE and CAGRs by Expenditure Type

Expenditure Type	Share in NHE	CAGR
Overall Rx (Retail & Non-retail)	13.5%	5.4%
Hospital Care	28.8%	5.4%
Physician and Clinical Services	18.7%	5.0%
Others	39.0%	5.4%

Note: Overall Rx includes both retail Rx and non-retail Rx. For retail Rx solely, the share in NHE is 9.0% and the CAGR is 5.2%. For non-retail Rx solely, the share in NHE is 4.5% and the CAGR is 5.7%.

According to our formula for the CAGR of the overall national health expenditure, we estimate it as:

$$CAGR_{NHE} \approx 5.3\%$$

Assuming an extreme case where the prescription drug spending growth rate is reduced to 0 due to price controls, the NHE growth will lose both the retail Rx and the non-retail Rx components entirely. This means that only the remaining types of spending are still increasing with their CAGRs, and the NHE growth rate will become solely dependent on the non-Rx part. Now the CAGR of the overall national health expenditure will become:

$$CAGR_{NHE} \approx 4.57\%$$

This is equivalent to approximately a 13.7% reduction in the NHE growth rate. Given that the NHE was \$5,263.3 billion in 2024, it will still increase by at least \$240.6 billion each year after strictly restricting the growth of Rx spending to 0.

Meanwhile, if the price controls are implemented solely on hospital care and physician services, instead of on overall prescription drug spending, the NHE growth will become:

$$CAGR_{NHE} \approx 2.82\%$$

This scenario corresponds to a 46.7% reduction in the NHE growth rate. Under such a freeze, national health expenditures would rise by at least \$148.4 billion annually, over \$90 billion less than under a drug-only freeze scenario.

This counterfactual sensitivity analysis demonstrates that prescription drugs account for only a modest proportion of overall health expenditure growth, while hospital care and physician services are the main drivers of the growth. Consequently, imposing price controls to halt the increase in Rx spending would have limited effects on curbing the boost in NHE, even if the Rx growth is reduced to zero. This finding suggests that policy efforts narrowly focused on drug pricing are unlikely to achieve meaningful containment of overall health spending absent complementary reforms targeting larger spending categories.

Section 6: Conclusion and Discussion

This policy brief highlights an important nuance in the ongoing debate over rising healthcare costs: while prescription drug spending has drawn significant political and public scrutiny, its actual contribution to overall healthcare spending growth remains relatively modest. Over the long-term period from 2016 to 2024, prescription drugs accounted for just 6 to 20 percent of the total increase in real health expenditures. Meanwhile, it is notable that hospital care and physician services, which together comprised nearly 50 percent of overall spending growth over the period. A counterfactual simulation further shows that even eliminating prescription drug spending growth would reduce the overall health care spending growth rate by only 13.67 percent, while freezing solely hospital and physician spending could reduce the growth rate by 46.7 percent. The result underscores the limited impact of targeting prescription drug prices alone without broader structural reforms.

These findings suggest that policy debates may disproportionately emphasize the role of pharmaceuticals in driving national health spending, potentially diverting attention from the broader structural cost pressures in service delivery. Although drug affordability, access, and pricing transparency concerns are valid for specialty and life-saving medications, focusing policy solutions primarily on Rx risks, overlooking the much larger spending dynamics associated with hospital infrastructure, labor costs, and physician reimbursement models (The Commonwealth Fund, 2023).

Moreover, recent legislation such as the Inflation Reduction Act (IRA) has placed a significant focus on drug pricing reforms, including Medicare price negotiation and redesign of Part D benefits. While measures to improve drug affordability for taxpayers and patients are

important, growing evidence suggests that price controls may also introduce unintended consequences, such as reduced innovation incentives or shifts in launch pricing strategies (National Pharmaceutical Council, 2024). At the same time, although hospital price growth and physician service intensity are consistently recognized as primary drivers of healthcare cost escalation, these areas have received comparatively less empirical and policy attention (Wager et al., 2024), and yet may pose a lower risk of the types of unintended consequences described above. Therefore, while targeted pharmaceutical reforms are necessary, they should be accompanied by a more comprehensive approach that addresses the broader, systemic sources of spending growth.

In sum, this policy brief illustrates that prescription drugs have contributed to cost growth, especially in recent years, but they remain part of a larger, more complex healthcare spending ecosystem. Effective cost containment will require policy solutions that reflect the full picture, rather than focusing narrowly on any single component.

References

1. American Academy of Actuaries. (2018, March). *Prescription drug spending in the U.S. health care system: An actuarial perspective*. <https://www.actuary.org/wp-content/uploads/2018/05/PrescriptionDrugs.030718.pdf>
2. Blumenthal, D., Fowler, E. J., Abrams, M., & Collins, S. R. (2020). Covid-19 — Implications for the health care system. *The New England Journal of Medicine*, 383(15), 1483–1488. <https://doi.org/10.1056/NEJMs2021088>
3. Centers for Medicare & Medicaid Services. (2024). National health expenditure accounts: NHE tables. *U.S. Department of Health and Human Services*. Retrieved July 30, 2025, from <https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/historical>
4. Congressional Budget Office. (2008). Technological change and the growth of health care spending (CBO Publication No. 8947). *Congressional Budget Office*. <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/89xx/doc8947/toc.htm>
5. Congressional Budget Office. (2022). *Prescription drugs: Spending, use, and prices*. <https://www.cbo.gov/publication/57772#:~:text=Spending%20on%20Prescription%20Drugs.,capita%20spending%20over%20that%20period.>
6. Dieleman JL, Baral R, Birger M, et al. US Spending on Personal Health Care and Public Health, 1996–2013. *JAMA*. 2016;316(24):2627–2646. doi:10.1001/jama.2016.16885
7. Lee, H., Park, D., & Kim, D. S. (2021). Determinants of growth in prescription drug spending using 2010–2019 health insurance claims data. *Frontiers in Pharmacology*, 12, 681492.
8. Kesselheim, A. S., Avorn, J., & Sarpatwari, A. (2016). The high cost of prescription drugs in the United States: origins and prospects for reform. *Jama*, 316(8), 858-871.
9. Martin, A. B., Hartman, M., Washington, B., Catlin, A., & National Health Expenditure Accounts Team. (2025). National health expenditures in 2023: Faster growth as insurance coverage and utilization increased: Article examines national health expenditures in 2023. *Health Affairs*, 44(1), 12-22.
10. McGough, M., Wager, E., Winger, A., Panchal, N., & Cotter, L. (2024, December 20). How has U.S. spending on healthcare changed over time? *Peterson-KFF Health System Tracker*. <https://www.healthsystemtracker.org/chart-collection/u-s-spending-healthcare-changed-time/#Total%20national%20health%20expenditures,%201970-2023>
11. National Center for Health Statistics. (2017). Health, United States, 2017: Table 40. Diabetes prevalence and glycemic control among adults aged 20 and over, by sex, age, and race and Hispanic origin: United States, selected years. *Centers for Disease Control and Prevention*. <https://www.cdc.gov/nchs/data/hus/2017/040.pdf>
12. National Pharmaceutical Council. (2024). IRA & the Medicare Drug Price Negotiation Program. *National Pharmaceutical Council*. Retrieved July 30, 2025, from [https://npcnow.org/topics/health-spending/ira-medicare-drug-price-negotiation-program#:~:text=Potential%20Unintended%20Consequences%20of%20the,Price%20Negotiation%20Program%20\(DPNP\).](https://npcnow.org/topics/health-spending/ira-medicare-drug-price-negotiation-program#:~:text=Potential%20Unintended%20Consequences%20of%20the,Price%20Negotiation%20Program%20(DPNP).)

13. Pritchard, D., Petrilla, A., Hallinan, S., Taylor Jr, D. H., Schabert, V. F., & Dubois, R. W. (2016). What contributes most to high health care costs? Health care spending in high resource patients. *Journal of Managed Care & Specialty Pharmacy*, 22(2), 102-109.
14. Reinhardt, U. E., Hussey, P. S., & Anderson, G. F. (2004). US health care spending in an international context. *Health Affairs*, 23(3), 10-25.
15. Roehrig, C. (2018). *Projections of the prescription drug share of national health expenditures including non-retail*. Altarum.
16. The Commonwealth Fund. (2023). High U.S. health care spending: Where is it all going? *The Commonwealth Fund*. <https://www.commonwealthfund.org/publications/issue-briefs/2023/oct/high-us-health-care-spending-where-is-it-all-going#:~:text=Key%20Findings%20and%20Conclusion:%20More,most%20likely%20to%20be%20affected.>
17. Wager, E., Rakshit, S., & Cox, C. (2024). What drives health spending in the U.S. compared to other countries? *Peterson-KFF Health System Tracker*. <https://www.healthsystemtracker.org/chart-collection/what-drives-health-spending-us-compared-other-countries/>