ASPE
ASSISTANT SECRETARY FOR PLANNING AND EVALUATION
OFFICE OF HEALTH POLICY

REPORT TO CONGRESS

# Prescription Drug Spending, Pricing Trends, and Premiums in Private Health Insurance Plans

Report Required by the Consolidated Appropriations Act, 2021

U.S. Department of Health and Human Services
Office of the Assistant Secretary for Planning and Evaluation

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Office of the Assistant Secretary for Planning and Evaluation

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## Executive Summary: Key Findings on Prescription Drug Spending, Pricing Trends, and Contributions to Premium Changes

Prescription drug prices are a top concern for policymakers and the public. As detailed in a recent report by ASPE, more than 4,200 drug products had manufacturer list price increases from January 2022 to January 2023; the average change in the manufacturer list price of these drugs was 15.2 percent, and 46.0 percent of these drugs had price increases that were higher than the rate of general inflation.[1] For many drugs, however, list prices are not the prices ultimately paid to manufacturers; payers or pharmacy benefit managers (PBMs) negotiate with manufacturers over formulary placement in exchange for discounts in the form of rebates[a] off the list price.

Furthermore, these post-rebate or net prices paid by private health insurance plans and issuers may be higher than the net prices received by manufacturers given supply chain markups and amounts retained by or paid to PBMs. However, comprehensive data on the net prices paid by private health insurance plans, issuers, and consumers do not exist for private health insurance coverage. To address that gap in data availability, section 204 of Division BB of Title II of the Consolidated Appropriations Act, 2021 (CAA) ("Section 204") directed group health plans and health insurance issuers offering group or individual (non-group) health insurance coverage ("private health insurance plans and issuers") to submit annually certain data on premiums, enrollment, nondrug medical spending, spending on prescription drugs, and prescription drug rebates to HHS, the Department of Labor (DOL) and the Department of the Treasury (UST) (collectively "the Departments").[b,2] The Office of Personnel Management (OPM) has joined the Departments to promote transparency in prescription drug and health care spending in the Federal Employees Health Benefits (FEHB) Program by requiring FEHB carriers to report information to the Departments, consistent with Section 204 and implementing regulations issued by the Departments and OPM. This new data collection is referred to in this report as the Prescription Drug Data Collection or "RxDC." On November 23, 2021, regulations directing private health insurance plans and issuers on how to report the data to the Departments appeared in the Federal Register.[c] Data for the first two years (2020 and 2021) were submitted by January 31, 2023.[d]

Section 204 further directs the Secretary of HHS, through ASPE and in coordination with the Inspector General of HHS, to make available on the HHS website a report on "prescription drug reimbursements

[a] As used throughout this report, the term "rebates" includes rebates, fees, and other remuneration transferred to PBMs from drug manufacturers and pharmacies.

[b] In this report, the term "private health insurance plans and issuers" will be used to refer to all group health plans and coverage (both self-insured and fully insured) issued by private health insurance issuers and/or sponsored by employers (including Federal, state and local governments) and all individual (non-group) health insurance coverage issued by private health insurance issuers. The term "private health insurance coverage" will be used to refer collectively to the coverage offered by these plans and issuers. These terms do not include plans operated by private companies for beneficiaries of public insurance programs such as Medicare or Medicaid. The participants, beneficiaries, and/or enrollees covered by private health insurance coverage will collectively be referred to as "members."

[c] The regulations relating to RxDC may be found at https://www.federalregister.gov/documents/2021/11/23/2021-25183/prescription-drug-and-health-care-spending.

[d] Data for 2022 were submitted by June 1, 2023 and will be analyzed in the next biannual report to Congress.

under group health plans and group and individual health insurance coverage, prescription drug pricing trends, and the role of prescription drug costs in contributing to premium increases or decreases under such plans or coverage," with similar direction to DOL and UST. The Departments agreed to address this directive by submitting and posting to their internet websites one report covering all private health insurance plans and issuers subject to Section 204 reporting requirements as well as FEHB plans. ASPE, acting on behalf of the Departments and OPM, contracted with RAND to conduct a literature review, analyze the RxDC data, and present the results, which may be found in the report from RAND Health Care, "Prescription Drug Prices, Rebates, and Insurance Premiums" ("RAND Background Report") posted alongside this report. We summarize key findings from RAND's analysis and other published data, on each of these topics below.

### Prescription Drug Spending (or Reimbursements) and Coverage

- The US spent a total of $406 billion on retail prescription drugs net of rebates in 2022, according to the National Health Expenditure Accounts (NHEA), rising from $291 billion in 2014.[e] Per capita retail prescription drug spending rose an average of 3.8 percent per year over the same period, from $974 in 2014 to $1,227 in 2022.[f]
- An estimated 143 million Americans had prescription drug coverage from private group health insurance plans (mostly employer-sponsored), and an estimated 11 million had prescription drug coverage from individual market health insurance plans in 2020.[g]
- Most private health insurance coverage includes prescription drug benefits. Most individual (non-group) market and small group market plans are statutorily required to provide prescription drug coverage. Nearly all large group market plans provide prescription drug coverage though they are not required to.[h]

[e] For the purposes of this report, retail prescription drugs are defined as prescription drugs dispensed through retail brick-and-mortar pharmacies and drug stores and mail-order pharmacies. For patients with insurance, retail drugs are generally paid for through pharmaceutical benefits. Retail drugs do not include prescription drugs administered in physicians' offices and hospitals and which are generally paid for through insurance plans' medical benefits.
[f] The NHEA may be found at https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/historical. Total and per capita retail prescription drug spending are presented in Table 2 of the NHEA. These figures are not adjusted for inflation; inflation, as measured by the CPI-U, averaged 2.7% annually during this period.
[g] These numbers were calculated from the Household Component of the Medical Expenditure Panel Survey (MEPS-HC) and only include those individuals living in the community. The sampling frame for the MEPS-HC is based on that of the National Health Interview Survey which excludes people with no fixed address or residing permanently in an institution such as a nursing home.
[h] The requirement for certain health insurance coverage to provide Essential Health Benefits (EHB) was introduced by the Affordable Care Act (ACA). See section 1301(a)(1)(B) of the ACA and section 2707 of the Public Health Service (PHS) Act. Large group market plans and self-insured group health plans are not required to cover EHB. Certain health plans already in force at the time the ACA was enacted that also meet certain other requirements ("grandfathered" plans), and certain individual and small group market plans in force at the time many of the ACA's market reforms took effect for the 2014 plan year ("grandmothered" plans) are not required to cover EHB. Plans that are not subject to the requirement may nonetheless offer partial or comprehensive drug coverage.

- Average deductibles and out-of-pocket maximums in employer-sponsored coverage have generally increased since 2014.[i] Employer-sponsored health insurance plans are making greater use of coinsurance, in which members pay a percentage of a drug's cost, rather than fixed copayments. Employer-sponsored health insurance plans have also adopted benefit designs with a larger number of cost-sharing tiers, allowing them to set higher cost-sharing for more expensive brand drugs.

### Prescription Drug Pricing Trends

- Despite differences in methods, data sources, the prescription drugs analyzed, and the period covered, estimates of recent trends consistently suggest gross drug prices have been growing more rapidly than prices net of rebates paid by manufacturers to PBMs.[j, 3]
- RAND analyzed the first two years of RxDC data and found that ratios of total spending net of rebates to gross spending including rebates were 0.80 in 2020 and 0.78 in 2021, with variation across therapeutic class, market segment, and state.[k] Rebates therefore accounted for 20-22 percent of gross drug spending in employer-sponsored and individual market plans in the RxDC data, a smaller share than the 31 percent in Medicare Part D[l] or the 53 percent in Medicaid.[m]

### Contribution of Prescription Drug Costs in Contributing to Changes in Premiums

- Previous work by ASPE and literature cited by RAND in the RAND Background Report indicate that consumers are highly sensitive to premiums and consider premiums more than expected out-of-pocket costs when choosing health insurance plans, which would give plans an incentive to increase out-of-pocket costs rather than premiums when faced with increases in prescription drug prices.

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[i] The trends in this bullet come from RAND's analysis of the KFF Employer Health Benefits Survey in the years 2014-22. The sample includes private firms and nonfederal government employers with three or more employees. The survey does not include multiemployer plans.

[j] The IQVIA Institute for Human Data Sciences, for example, estimated that between 2017 and 2022, prescription drug spending at list (gross) prices grew 7.4 percent, while payer net spending increased 4.5 percent and spending at manufacturer net prices increased 5.6 percent. Because the volume component of each of these spending estimates is the same, the differences among them are due to differences between trends in gross and net prices. See IQVIA Institute for Human Data Sciences, The Use of Medicines in the U.S. 2023, April 2023 (https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/the-use-of-medicines-in-the-us-2023/the-use-of-medicines-in-the-us-2023.pdf), p. 27. In addition, Mallatt et al. (2024) find that list prices of retail drugs grew by an average of 9.1 percent annually between 2007 and 2020 but prices after rebates grew by an average of 4.3 percent annually over the same period.

[k] Market segments are categories of different types of private health insurance coverage. RxDC specifies seven market segments: self-insured large employer plans, self-insured small employer plans, fully-insured large group plans, fully-insured small group plans, individual plans, student health plans, and FEHB plans.

[l] Direct and Indirect Remuneration (DIR), which includes pharmacy fees as well as PBM rebates, accounted for 31.3 percent of Medicare Part D gross drug costs in calendar year 2022. Table IV.B8 of the 2024 Medicare Trustees Report (https://www.cms.gov/oact/tr/2024) presents historical and projected DIR as a share of gross drug costs for Medicare Part D.

[m] Medicaid rebates represented 52.8 percent of gross drug spending in Fiscal Year 2021. ASPE calculation from data in https://www.macpac.gov/wp-content/uploads/2022/12/MACSTATS_Dec2022_WEB-508.pdf, pp. 74-76.

- In a technical expert panel convened by ASPE with RAND contractor support, some participants in the panel mentioned that plans and issuers may respond to increases in prescription drug costs with changes to formularies or utilization management rather than premium increases.

## Improving RxDC

RxDC development over the past three-and-a-half years has appropriately focused on developing regulations and guidance, building the data collection platform, and establishing relationships with submitting entities (plan sponsors, PBMs, issuers, third-party administrators (TPAs), and other organizations). Nevertheless, RAND encountered some limitations when analyzing the data, which are detailed later in this report. Experience with the first round of data submission for 2020 and 2021 indicates that some improvements to the RxDC data would allow ASPE and the Departments to offer expanded analyses in future reports.

## Overview of Report

ASPE developed this report to provide background on the prescription drug market, discuss the need for RxDC, and summarize the findings from the initial two years of RxDC.[n] This report contains the following sections:

- **Background: Prescription Drug Coverage, Benefit Design, and the Pricing of Retail Prescription Drugs** lays out the background on prescription drug coverage, spending, and pricing in the US that led to the development of RxDC. It discusses recent trends in prescription drug coverage and benefits, reviews the functioning of the market for prescription drugs and how prescription drugs are priced, and discusses the potential impact of drug pricing on cost-sharing and affordability.
- **The Need for RxDC** lays out the Federal statutory requirement for private health insurance plans and issuers to submit data on prescription drug spending annually to the Departments. It explains how RxDC will help improve our understanding of retail prescription drug prices and spending in private health insurance coverage.
- **Brief Description of the 2020 and 2021 RxDC and Initial Findings** describes the format of the first two years of RxDC, describes the limitations encountered when using the data, and summarizes the results of illustrative analyses RAND conducted on the initial two years of data.
    - The initial results for the first two years of data show the potential for increasing our understanding of prescription drug reimbursements in private health insurance coverage and prescription drug pricing trends in the private health insurance coverage market.
    - However, certain limitations of the data precluded analysis of some questions of interest to policymakers such as the contribution of prescription drug price changes to changes in private health insurance premiums.

[n] The RAND Background Report, prepared by RAND Health Care under contract to ASPE, provides a detailed description of the data and reports the findings from RAND's analyses of the data. It may be found at https://aspe.hhs.gov/.

- **Conclusion** reviews the results, presents suggestions for improving the data, and discusses opportunities for further analyses.

# I. Background: Prescription Drug Coverage, Benefit Design, and the Pricing of Retail Prescription Drugs

## Trends in Prescription Drug Coverage and Benefits

Private health insurance coverage, which financed 38% of total retail drug spending in 2022 according to the NHEA, is by far the largest source of prescription drug coverage for Americans.[o, p] Most private health insurance coverage includes prescription drug insurance coverage. Most small group and individual health insurance plans are required by the ACA to offer prescription drug coverage. Large group market plans and self-insured plans are not required to offer prescription drug coverage, but RAND found in its analysis of the MEPS-HC that, from 2014 to 2020, over 90 percent of individuals enrolled in private group health insurance coverage had prescription drug coverage. Some individual (non-group) health insurance coverage is not required to offer prescription drug benefits, and prescription drug coverage rates were much lower among those enrolled in such coverage, standing at just over 60 percent in 2020.[q]

Based on RAND's analysis of the MEPS-HC as detailed in the RAND Background Report, the estimated number of people with prescription drug coverage through private group health insurance coverage rose from 149 million in 2014 to 156 million in 2017, before falling back to 152 million in 2019. It then fell further to 143 million in 2020 following the onset of the COVID-19 pandemic.[r] In the MEPS-HC data, the number of people with prescription drug coverage through private individual health insurance hovered between 9 and 11 million from 2014 to 2020. Figure 1 shows the numbers of individuals with group coverage, Marketplace individual (non-group) coverage, and off-Marketplace individual (non-group) coverage, and the shares of each category with prescription drug coverage from 2014-2020.

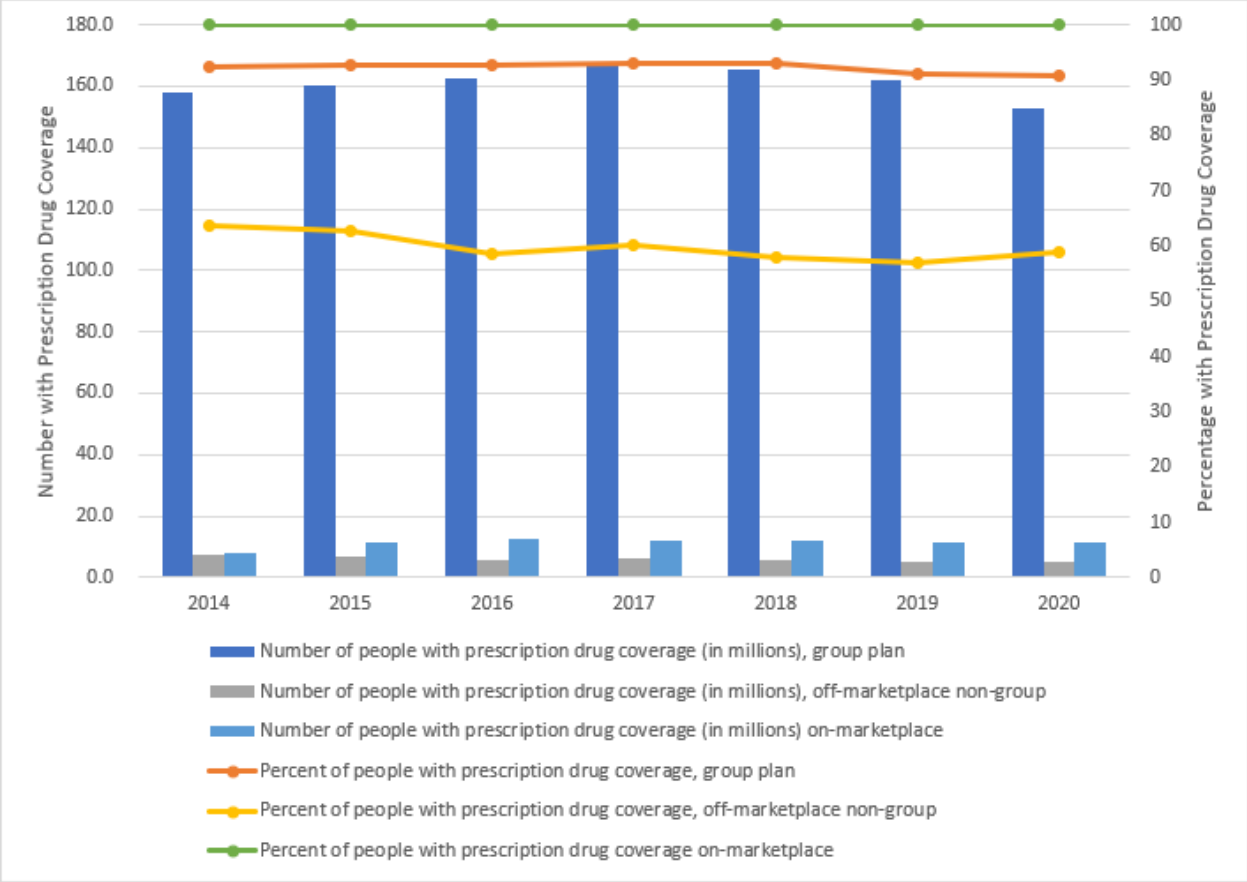
[o] Private health insurance coverage may be divided into private group health insurance coverage and private individual (non-group) health insurance coverage. In this report, private group health insurance coverage includes employer-sponsored coverage (both self-insured and fully-insured, and both large group and small group), coverage sponsored by employee organizations such as unions, and coverage sponsored jointly by both. Private individual (non-group) health insurance coverage includes both plans sold through the ACA Marketplaces ("Marketplace plans" or "on-Marketplace plans") and those purchased outside the Marketplaces ("off-Marketplace plans").

[p] The NHEA may be found at https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/historical. The source of funds for retail prescription drug expenditures is presented in Table 16.

[q] The requirement for certain health insurance coverage to provide EHB was introduced by the ACA. See section 1301(a)(1)(B) of the ACA and section 2707 of the PHS Act. Large group market plans and self-insured group health plans are not required to cover EHB. Certain health plans already in force at the time the ACA was enacted that also meet certain other requirements ("grandfathered" plans), and certain individual and small group market plans in force at the time many of the ACA's market reforms took effect for the 2014 plan year ("grandmothered" plans) are not required to cover EHB. Plans that are not subject to the requirement may nonetheless offer partial or comprehensive drug coverage.

[r] For more information on changes in health insurance coverage in the COVID-19 pandemic, see the ASPE report "Tracking Health Insurance Coverage in 2020-21", available at https://aspe.hhs.gov/reports/tracking-health-insurance-coverage.

**Figure 1. Number and Percentage of Group Market and Individual (Non-Group) Market Health Insurance Plan Members Reporting Having Prescription Drug Coverage Under their Health Plan, 2014–2020**



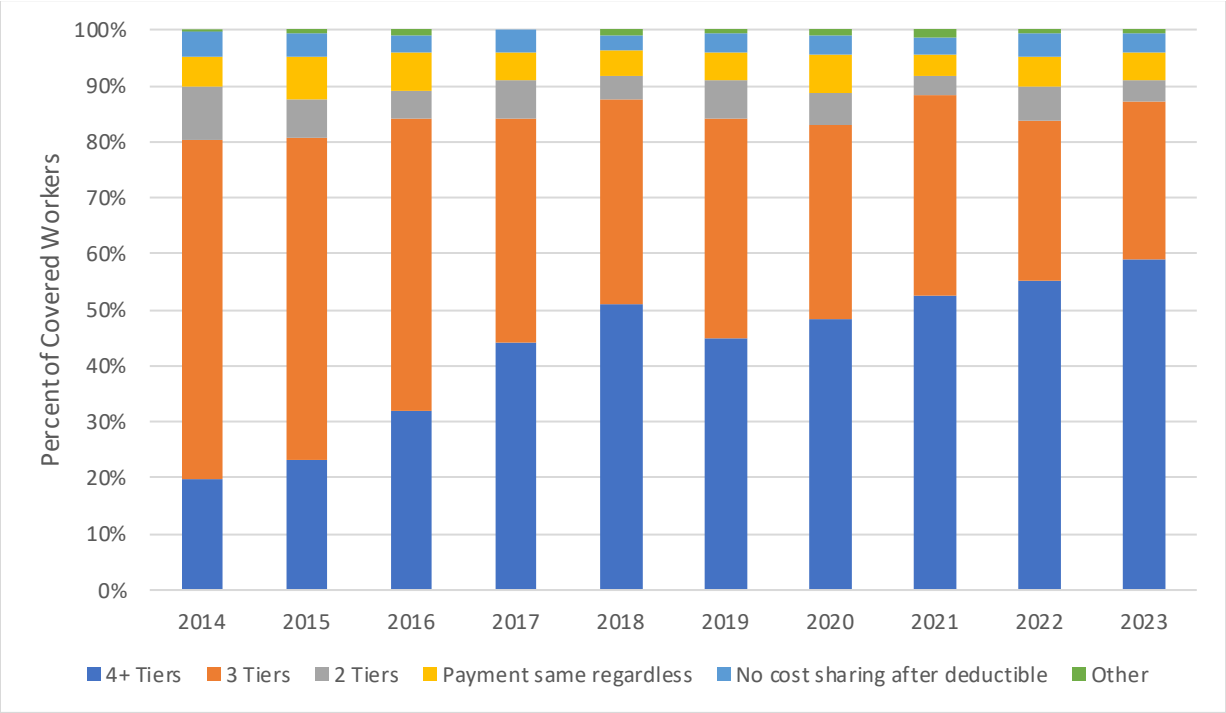

Source: RAND analysis of the 2014-2020 MEPS-HC.
Note: On-Marketplace coverage includes all individual (non-group) plans purchased through the Marketplaces. Off-Marketplace coverage includes all individual (non-group) plans purchased outside the Marketplaces. In the MEPS-HC, Marketplace coverage includes coverage purchased in all types of Marketplaces: federally-facilitated, state-based, and state-based using the federal platform.

## Trends in Prescription Drug Benefit Design

RAND also analyzed two data sources, the KFF Employer Health Benefits Survey and the Centers for Medicare & Medicaid Services (CMS) Center for Consumer Information and Insurance Oversight (CCIIO) Health Insurance Exchange Public Use Files, to examine trends in prescription drug coverage design in employer-sponsored group health plans and individual (non-group) plans purchased through the Federally-facilitated Marketplaces (FFM) and the State-based Marketplaces using the Federal Platform (SBM-FP). Trends in plan design measured across plans indicate out-of-pocket costs may have risen between 2014 and 2023. Average deductibles and average out-of-pocket maximums in both employer-

sponsored plans and individual (non-group) plans purchased in the FFMs and SBM-FPs increased.[s] As Figure 2 shows, formularies in employer-sponsored plans increased in complexity with a rise in the share of plans with 4 or more tiers, particularly from 2014 to 2018.[t, u]

**Figure 2. Trends in the Distribution of Covered Workers In Employer-Sponsored Health Plans Facing Different Numbers of Formulary Tiers, 2014-2023**




Source: RAND analysis of 2014-2023 KFF Employer Health Benefits Survey data.

Note: Categories are mutually exclusive. The survey only asks about each employer's largest plan so this chart represents the share of covered workers that has a plan with that number of tiers available to them. The number of formulary tiers is inclusive of any specialty-only tiers. Starting in 2017, the survey started asking employers separately about formulary tiers that do not exclusively contain specialty tiers and those that do. Prior survey years collected data on the number of formulary tiers but did not differentiate between the types of tiers in the same way, so the 2014-2016 data may not be directly comparable to the 2017-2024 data.

### Cost-sharing and utilization management in prescription drug coverage

Private health insurance plans and issuers use multiple strategies to encourage effective use of medical services and prescription drugs by members, including setting cost-sharing for prescription drugs and managing drug utilization:

[s] These numbers were not adjusted for inflation.

[t] A formulary is a list of prescription drugs covered by a health plan. It may be split into subgroups called "tiers" with each tier having a different copayment or coinsurance.

[u] As discussed in the table note, starting in 2017, formulary tiers exclusively for specialty drugs are not being counted in Figure 2. The actual increase in formulary complexity may therefore have been higher.

- They can require payment of either copayments or coinsurance by members. Copayments are fixed amounts that do not vary with the total price of the prescription drug while coinsurance is expressed as a percentage of the drug's total price. Plans can also vary the levels of copayments and coinsurance.
- They can group prescription drugs into tiers within their formularies, with different copayments and/or coinsurance by tier.
- They can use utilization management rules such as step therapy, prior authorization, and quantity limits.
- They can refuse to cover certain drugs at all, subject to certain constraints.[v]

Recent evidence indicates that private health insurance plan members may be increasingly exposed to higher cost-sharing. As detailed in the RAND Background Report, RAND finds in its analysis of the KFF Employer Health Benefits Survey that employer-sponsored group health plans are increasingly shifting toward cost-sharing structures that make patients more sensitive to list prices. Since higher formulary tiers are more likely to require coinsurance rather than copayments as cost-sharing from the patient, this trend suggests that patients are more likely to be exposed to the risk of either paying large amounts in coinsurance or going without the drug.

In an analysis of claims data for private health insurance plans, Mallatt et al. (2024) find that out-of-pocket prices of retail prescription drugs rose by 5.8 percent annually between 2007 and 2020, a rate higher than the growth rate that they calculate for retail prescription drug prices after rebates.[4] They find that much of the growth is driven by increases in deductible and coinsurance payments, which are largely set on drug list prices.

## Understanding Prescription Drug Pricing and the Market for Prescription Drugs

The national market for retail prescription pharmaceuticals is complex. Retail pharmaceuticals move from the manufacturer to the distributor to the pharmacy, and finally to the patient, with payments from one party to the other along each step of the way. Health insurance coverage plays a substantial and steadily increasing role in financing pharmaceutical purchases. Either public or private health insurance covered 16 percent of national prescription drug spending in 1970, 68 percent in 2000 and 85 percent in 2022 according to the NHEA.[w] Private health insurance issuers and employers, and the PBMs they hire to manage pharmaceutical benefits, are therefore additional stakeholders in the system.

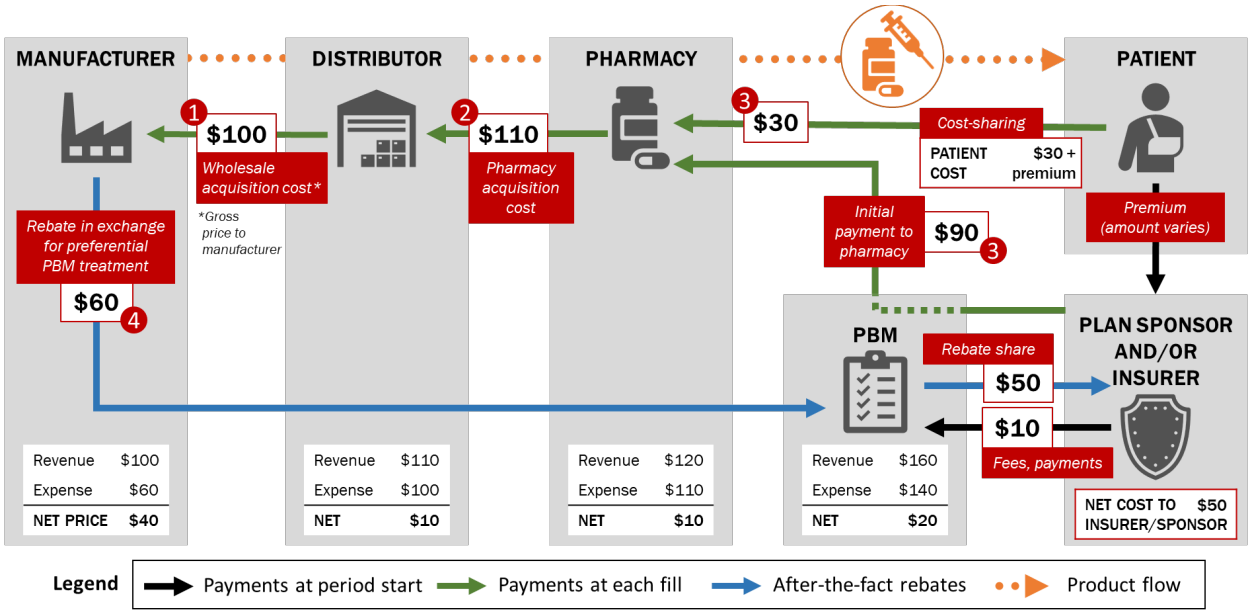
Figure 3, taken from the RAND Background Report, is a visual representation of the financial transactions that typically occur when a patient receives a brand-name prescription drug covered by insurance. The green arrows show the primary financing route: the patient and insurer, plan sponsor or PBM together pay the pharmacy for the drug; the pharmacy in turn pays the distributor, who then pays the

[v] Private health insurance coverage subject to the ACA's EHB requirements must cover at least the greater of one drug in each U.S. Pharmacopeia (USP) category and class; or the same number of prescription drugs in each USP category and class as the applicable EHB-benchmark plan. 45 CFR 156.122(a)(1).

[w] The NHEA may be found at https://www.cms.gov/data-research/statistics-trends-and-reports/national-health-expenditure-data/historical. The source of funds for retail prescription drug expenditures is presented in Table 16.

manufacturer. The blue arrows show an accompanying set of financial transactions that reduce the amounts paid by the PBM, plan sponsor, or insurer. Months after the transaction, the manufacturer may pay the PBM a rebate in return for favorable placement on the PBM's formulary. Part or all of this rebate may be passed on to the insurer or plan sponsor.

**Figure 3. Illustrative Flows of Product and Payments for Retail Pharmacy-dispensed Brand-name Drugs**




The amounts shown in Figure 3 are **purely illustrative**; relatively little is known by the public about the typical percentages actually retained by each commercial entity in these transactions. Nor is very much known about the negotiation processes that produce the rebate amounts or the provisions of the contracts between PBMs and private health insurers or sponsors. In addition, for the sake of clarity, Figure 3 does not show all flows of payments among entities. For example, there can be payments from the manufacturer back to wholesalers, or payments from manufacturers to pharmacies, on behalf of patients, in the form of coupons.

## Recent Increases in Drug Spending Mostly Driven by Increases in Drug Prices

In a review of research literature, RAND reports that multiple studies have found that higher prices have been a significant factor in recent increases in drug spending. IQVIA found, for example, that prescription volume (as measured by defined daily doses) grew 1.9 percent from 2018 to 2022 while prescription drug spending at net prices grew 5.6 percent over the same time period, implying that much of the growth was driven by increases in spending per dose.[5] Other sources have found evidence that one significant factor in higher drug spending is increased utilization of highly-priced pharmaceuticals such as specialty drugs, drugs administered in providers' offices, and biologics. One paper found, for example, that gross spending on retail specialty drugs increased 14.5 percent per year between 2010 and 2017.[6]

## Rising Prescription Drug Prices Affect Adherence and Health Through Higher Cost-Sharing

It is well-established that higher out-of-pocket costs worsen patient adherence to prescription drug treatment.[7,8] Patients report in surveys that costs impact their decisions to take prescription drugs and issues with prescription drug affordability seem to be common even among insured patients. An estimated 6.6 percent of adults aged 18-64 who took prescription medication in the past year and who had private prescription drug coverage did not take medicine as prescribed due to cost in 2021 according to the National Health Interview Survey.[9] Research reviewed in a recent ASPE report found that 18.8 percent of privately insured patients using insulin rationed their insulin because of the cost.[10]

These affordability issues can have serious consequences as adherence to prescription drug treatment has been shown to have significant effects on the health of patients with chronic conditions. The effects of poor adherence on patient outcomes have been well-studied for diabetes, for example. Poor adherence to medication by diabetes patients has been associated with increased morbidity and mortality, increased utilization of medical services, and higher total medical spending.[11,12]

Rising drug list prices combined with the increasing levels of rebates can have detrimental effects on prescription drug adherence and health for private health insurance plan members through higher cost-sharing. Higher list prices likely induce higher cost-sharing in the short term since coinsurance is typically calculated as a percent of the drug's list price, not what the plan pays for the drug net of rebates. However, plans may adjust their cost-sharing structures to address the tradeoff between more generous coverage, which provides more risk protection, and higher costs that translate into higher premiums instead of higher cost-sharing. On the other hand, as discussed above, plans appear to be choosing cost-sharing structures with more formulary tiers and higher coinsurance percentages in recent years. Furthermore, limited evidence has been put forth that higher rebates induce higher list prices.[13,14]

When considering the tradeoff between raising premiums and raising cost-sharing when faced with rising drug prices, plans may face incentives to raise out-of-pocket costs rather than premiums. Some research has found that consumers consider premiums more than expected out-of-pocket costs when choosing plans, so plans might prioritize keeping premiums down to attract enrollees.[15,16] Other studies suggest that some plans deliberately choose higher cost-sharing over raising premiums to discourage selection of the plan by consumers with high-cost drug needs.[17,18]

The magnitudes of the effects of higher pricing on cost-sharing and on premiums are unclear at this point, which makes it hard to assess potential policy solutions. Furthermore, researchers, analysts, and policymakers have raised questions about issues such as the business practices of PBMs and the downstream effects on patients of the high level of concentration in the PBM market.[19,20,21]

As outlined in the RAND Background Report, none of the currently available data sources used for studying the private health insurance market give a complete and detailed perspective on drug net prices or rebates in that market. Therefore, little is known about the post-rebate prices being paid by plans even though those prices are what go into the plans' true costs. Commercial data sources such as IQVIA's National Sales Perspective data give gross prices received by the manufacturer while sources such as medical claims data or the MEPS-HC give the prices paid at the point of sale (including pharmacy costs)

with no information on rebates, which are paid months later. The NHEA measures prescription drug spending with payer rebates netted out at an aggregated level.

## II. The Need for RxDC

The pricing of retail prescription drugs in private health insurance has the potential to significantly affect access to and spending on drugs for millions of Americans. The complexities of the pharmaceutical pricing system and the gaps in our understanding of the impact of the system on prescription drug spending and cost-sharing, health insurance premiums in the private market, and member welfare and health have led to a need for data on the rebates being paid by private health insurance plans and issuers. The goal of RxDC is to contribute to greater transparency in the pricing of prescription drugs by filling in this gap. The Secretary of HHS specifically cited RxDC as one of the administrative actions being undertaken by CMS to improve transparency in the prescription drug industry and increase our understanding of the impact of prescription drug rebates on premiums and out-of-pocket costs. [22]

### RxDC Can Help Answer Basic Questions

RxDC has the potential to answer a number of important yet basic questions relating to prescription drug benefits in private health insurance coverage and to prescription drug pricing. These include:

- What are the trends in gross and net pharmaceutical spending by private health insurance coverage market segment and therapeutic class?
- What are the trends in health insurance premiums and in employer/employee contributions?
- How do rebates in the private health insurance coverage market compare with rebates in Medicare and Medicaid?
- How do different categories of spending such as prescription drugs, outpatient services, and inpatient services contribute to premiums?

Some of these questions may be answered with the RxDC system in place for the two first years, as discussed in the next section. Other questions are harder to address and will require both further improvements to RxDC and additional data analysis. The last question in the list above will be particularly challenging to answer, even with more detailed data than is currently available, as private health insurance plans and issuers consider many factors simultaneously when setting premiums. Moreover, other factors, such as the market environment for plans, will not be observed in the data but might affect the level of premiums. Breaking out the separate contributions of different categories will require both great expertise and careful analysis of complete and detailed data.

### Introduction to RxDC

Under Division BB, Title II, Section 204 of the CAA, private health insurance plans and issuers must annually submit data to the Departments on premiums, enrollment, nondrug medical spending, spending on prescription drugs, and prescription drug rebates. Under 5 U.S.C. 8910, OPM must make a continuing study of the operation and administration of the FEHB Program, including surveys and reports on FEHB

plans and on the experience of these plans. Pursuant to its authority under section 8910, OPM has joined the Departments to promote transparency in FEHB prescription drug and health care spending by requiring FEHB carriers to report information to the Departments, consistent with Section 204 and implementing regulations issued by the Departments and OPM.

The Departments and OPM issued regulations and designed data templates for RxDC. [x] Pursuant to these regulations, TPAs and PBMs may submit data on behalf of private health insurance plans and issuers. In this report, we refer to the private health insurance plans and issuers, TPAs, PBMs, and other organizations who submit data as part of RxDC as "submitting entities."

Section 204 directed the Secretary of HHS as follows:

> *[T]he Secretary, acting through the Assistant Secretary of Planning and Evaluation and in coordination with the Inspector General of the Department of Health and Human Services, shall make available on the internet website of the Department of Health and Human Services a report on prescription drug reimbursements under group health plans and group and individual health insurance coverage, prescription drug pricing trends, and the role of prescription drug costs in contributing to premium increases or decreases under such plans or coverage, aggregated in such a way as no drug or plan specific information will be made public.*

Similar statutory mandates apply to DOL and UST with regard to the private health insurance coverage under their regulatory authority. The Departments and OPM agreed to issue one report covering all plans subject to the Section 204 reporting requirements as well as FEHB plans.

## III. Brief Description of the 2020 and 2021 RxDC and Initial Findings

### Brief Description of RxDC

In RxDC, submitting entities are required to submit a variety of information about prescription drug spending and rebates, medical services spending, and premiums. Each submission for the years 2020 and 2021 consisted of between one and eight data tables labelled D1 through D8 along with documentation of plan characteristics and narrative responses to certain questions. The submitted data was aggregated by each submitting entity to the market segment, state, and year level. Table 1 summarizes the contents of the eight templates.

**Table 1. RxDC Data Template Contents**

| Data Template | Short Description | Content |
|---|---|---|
| D1 | Premium and life years | Average premiums, total premiums, member life-years |

[x] The regulations relating to RxDC may be found at https://www.federalregister.gov/documents/2021/11/23/2021-25183/prescription-drug-and-health-care-spending.

| Data Template | Short Description | Content |
|---|---|---|
| D2 | Medical spending other than retail prescription drugs | Spending and cost-sharing by medical spending categories |
| D3 | Top 50 most frequently dispensed brands of retail prescription drugs | Net spending, number of paid claims, number of utilizing members, dosage units, cost-sharing for 50 drugs |
| D4 | Top 50 most costly retail prescription drugs | Net spending, number of paid claims, number of utilizing members, dosage units, cost-sharing for 50 drugs |
| D5 | Top 50 retail prescription drugs with largest spending increases | Net spending, number of paid claims, number of utilizing members, dosage units, cost-sharing for 50 drugs |
| D6 | Total retail prescription drug spending | Net spending, rebates totaled across all drugs |
| D7 | Rebates by therapeutic class of drug | Net spending, number of paid claims, number of utilizing members, dosage units, cost-sharing, rebates for all therapeutic classes |
| D8 | Rebates for the top 25 drugs | Net spending, number of paid claims, number of utilizing members, dosage units, cost-sharing, rebates for 25 drugs |

### Limitations of the Initial Two Years of RxDC

As a new data collection effort, the first two years of submission of RxDC data contained valuable information but, at the same time, had limitations, which are identified in the RAND Background Report. Two of the most significant limitations and their consequences can be described as follows:

- Templates D1 and D2, which contained nondrug data, were often aggregated to the plan or issuer level and typically submitted by the private health insurance plan or issuer. Templates D3 through D8, which contained drug data, were sometimes submitted by the plan or issuer's PBM with the data aggregated with those of other plans that the PBM served. RAND found that in many cases, it was not possible to directly link data from the same underlying health plan across the eight required templates for the purposes of conducting the analyses of the first two years of data collection described here and in its report.[y] Because of this limitation, RAND was not able to use the RxDC data to address the role of prescription drug costs in contributing to changes in premium levels.
- While the instructions indicate that reported spending must be spending by the plan or issuer, it appears in some cases that the reported spending aggregated at the PBM level in templates D3 through D8 was spending by the PBM that submitted the data. When PBMs retain a portion of

[y] RAND assessed the success of linkages using the unit of RxDC reporting level combination, which is a combination of submitting entity, market segment, state, and year. Less than half of reporting level combinations submitting the first template (D1), with data on premiums and life years, can be linked to reporting level combinations submitting the seventh template (D7), with data on rebates. Overall, RAND reports that only 10.6 percent of reporting level combinations consisted of a full set of eight templates that could be linked together in its analysis.

negotiated rebates and do not pass them on to the plan sponsor or issuer, the amounts reported via RxDC may include those amounts. This limits the ability to use the data to understand what portion of rebates is retained by PBMs.

The Departments and OPM are working together to make the data more useful for analysis. For example, they are looking for opportunities to improve the consistency of the aggregation of data and to facilitate linkages among templates from related entities, for example between the enrollment, premium, and nondrug spending data submitted by a plan or issuer or TPA and the drug spending data submitted by a PBM on the plan or issuer's behalf. Such changes could, for example, allow the Departments and OPM to estimate in future Reports to Congress rebates and prescription drug spending per member per month by market segment and by state, and to better compare the contributions of changes in drug spending and changes in nondrug health spending to changes in premiums for employer-sponsored and individual market health coverage. When considering these improvements to RxDC, the Departments will engage with stakeholders and consider the tradeoffs with the data submission burden to submitting entities and implementation costs to the government.

### Illustrative Analyses of 2020 and 2021 RxDC Data

RAND conducted a set of *"illustrative analyses"* of the first two years of RxDC to show the potential usefulness of the data. Due to challenges related to linking templates containing data from the same health insurance plan, RAND only conducted analyses on data from one template at a time. *RAND warns that the data for each template used for the analyses are not necessarily representative of the entities who were required to submit data nor of the entities who actually submitted data. For this reason, datasets used in the analyses can be thought of as convenience samples, although all analyses used the full universe of applicable submitted data after deduplication.*

The following are the contents and results of RAND's analyses, briefly summarized. The full results may be found in the RAND Background Report.

#### Ratios of net to gross prescription drug spending overall, by market segment, and by geography

RxDC requires the submission in template D6 of the total amount spent on prescription drugs by health insurance plans and members net of rebates ("net spending") and, separately, of the amount received by plans in the form of rebates. RAND calculates gross spending as the sum of net spending and rebates and then calculates the ratio of net to gross spending. This ratio can be interpreted as an approximation to the ratio of net to gross prices (or one minus the rebate discount across all drugs).

RAND found the ratio of net spending to gross spending across all market segments to be 0.80 in 2020 and 0.78 in 2021. Interpreting these figures as price ratios would imply average discounts of 20 percent in 2020 and 22 percent in 2021. The ratios are slightly higher than estimates from other sources, but those other sources used different methods or were either based on or include the non-private market.[z]

[z] The 2024 Medicare Trustees Report analyzed the Medicare market and found that direct and indirect remuneration (which includes rebates and fees) were 31.3% of Part D expenditures in calendar year 2022 (Table IV.B8), implying a

As shown in Table 2, RAND found only slight variations in ratios across market segments with higher ratios in self-insured small employer plans, individual plans, and student plans, and the lowest ratio in self-insured large employer plans. While RAND found a larger degree of variation across states, differences in the shares of plans in each market segment, patient case mix, and practice patterns likely explains some of this variation. Appendix A lists ratios of net to gross spending by state.

net-to-gross spending ratio of 0.71. IQVIA (2022) finds that the net-to-gross spending ratio for all medicines is 0.76 but their estimate is approximate and based on proprietary modelling. Mulcahy et al. (2021) finds a net-to-gross spending ratio of 0.67 but their estimates are based on net spending from the manufacturer perspective, not on what final payers pay.

**Table 2. Ratio of Net to Gross Spending in the 2020 and 2021 RxDC Data, Overall and by Market Segment**

| Market segment | RxDC Reporting Level Combinations (count in millions) | 2020 | | 2021 | |
|---|---|---|---|---|---|
| | | Gross Spending ($ millions) | Net to Gross Ratio | Gross Spending ($ millions) | Net to Gross Ratio |
| All market segments | 17,493 | 190,006 | 0.795 | 199,083 | 0.779 |
| Self-insured large employer plans | 7,213 | 101,140 | 0.782 | 106,993 | 0.767 |
| Fully-insured small group plans | 4,796 | 17,167 | 0.799 | 16,851 | 0.779 |
| Fully-insured large group plans | 3,075 | 39,675 | 0.797 | 38,724 | 0.776 |
| Self-insured small employer plans | 1,761 | 3,884 | 0.821 | 4,139 | 0.808 |
| Individual market | 425 | 21,740 | 0.839 | 25,434 | 0.825 |
| Student market | 148 | 650 | 0.833 | 643 | 0.803 |
| Federal Employees Health Benefits plans | 75 | 5,749 | 0.798 | 6,300 | 0.792 |

Source: RAND analysis of RxDC data from the total prescription drug volume and spending template (D6) (April 26, 2023, extract).
Note: An RxDC reporting level combination is a combination of submitting entity, market segment, state, and year. Net total spending on prescription drugs is reported as total spending in the total prescription drug volume and spending table (D6). Gross total spending is calculated as net spending plus rebates (current year total rebates/fees/other remuneration). Further details on how the dataset was constructed and the calculation of spending ratios may be found in the accompanying RAND Background Report.

### Ratios of net to gross prescription drug spending by therapeutic class

RAND calculated the same ratios for five selected therapeutic classes of drugs:

- Factor Xa inhibitors (oral anticoagulants)
- Insulin analogs
- Tumor necrosis factor blockers (biologic anti-inflammatory agents)
- Glucagon-like peptide (GLP)-1 receptor antagonists (antihyperglycemics)
- Kinase inhibitors (biologic oncology drugs)

These classes were selected to cover a range of net-to-gross ratios. Previous work indicated that the first four classes in the list had ratios of spending at net prices to spending at gross prices significantly below 1, suggesting a high level of rebates, and that the fifth class, kinase inhibitors, had a ratio of close to 1, suggesting little rebating.[23] The RAND analysis of RxDC data found similar ratios with insulin analogs, for example, having a ratio of 0.50 and kinase inhibitors a ratio of 0.98. RAND suggests that the difference in ratios results from the three insulin analogs in their class being close therapeutic substitutes (drugs used on similar conditions with similar effects) with one another while the drugs within the kinase inhibitor class are not substitutes. The existence of therapeutic substitutes increases the bargaining power of PBMs when negotiating prices with manufacturers, leading to the manufacturers paying larger rebates.

### Ratios of patient cost-sharing to net and gross spending by therapeutic class

RAND calculated ratios of patient cost-sharing to both net and gross spending for the same five therapeutic classes and separately for 2020 and 2021. The ratio of cost-sharing to spending at net prices rose slightly for four of the five classes, even as the ratio of overall net to gross spending fell, suggesting that the growth in rebates, which is leading to relative decreases in net prices, may not be resulting in lower cost-sharing for patients in the submitted data.

### Implied gross and net prices by therapeutic class

RAND calculated the implied average gross and net prices per claim for the same five therapeutic classes in both 2020 and 2021 based on submitted spending and volume information. Both net and gross prices generally rose from 2020 to 2021 but the price increase was above general inflation for only one of the five classes of drugs (factor Xa inhibitors).

### Comparison of ranked drug lists

The submitting entities submitted ranked lists of the 50 drugs with the most net spending and the 50 mostly frequently dispensed brand-name drugs. Under the disclosure restrictions in Section 204, prohibiting HHS from disclosing any confidential or trade secret information submitted to it under RxDC, we cannot provide information on specific drugs in this report but can analyze general patterns in the rankings.

Which drugs appeared on the ranked lists (top 50 most frequently dispense prescription drugs, top 50 most costly retail prescription drugs, and top 50 prescription drugs with the largest spending increases) differed substantially across plans, but RAND found evidence of strong correlations across lists. Drugs that had lower average ranks on the lists they appeared on also appeared on a higher percentage of lists. For example, in the 2020 data, drugs that fall, on average, in the top ten drugs by spending across plans

in the lists that they appear on are also all listed on at least 20 percent of all lists. By contrast, most of the drugs whose spending ranks them, on average, in the 30th position or above appear on less than 20 percent of all lists. [aa]

A few drugs appeared on a small percentage of the lists of drugs with the greatest amounts of net spending while being highly ranked on the lists they did appear on; RAND suggested their absence on other lists may have reflected the successful negotiation of rebates for the plans submitting data.

## IV. Conclusion

An estimated 143 million Americans had prescription drug insurance coverage through health insurance plans, either through their or a family member's employment, and 11 million had it through health insurance coverage purchased in the individual market in 2020 according to the MEPS-HC. As discussed above in Section I, recent evidence indicates that members of private health insurance plans are increasingly exposed to higher out-of-pocket costs in recent years. To better understand trends in private health insurance coverage, and the role of prescription drug spending, Section 204 of Title II of Division BB of the CAA established a new data collection from private health insurance plans and issuers including information about enrollment, premiums, drug, and other medical spending.

This report and the RAND Background Report have presented key findings on these issues from existing data and literature, and also presented initial findings from RAND's analysis of the first two years of RxDC. The new data indicate that:

- The ratio of net spending to gross spending in private health insurance coverage averaged 0.80 in 2020 and 0.78 in 2021, with some variation by market segment and state. If we interpret these ratios as price ratios, this evidence suggests that the net-to-gross price ratios in the private health insurance coverage market are higher than the equivalent ratios seen in Medicare and Medicaid. Higher net-to-gross price ratios in the private health insurance coverage market suggest that rebates and other remuneration are lower in that market than in Medicare and Medicaid.
- Net-to-gross spending ratios varied by therapeutic class, in line with the results of previous research on rebates from the manufacturer perspective by therapeutic class.
- Between 2020 and 2021, ratios of cost-sharing to spending at net prices rose slightly for four of five therapeutic classes chosen for this analysis, even as the ratio of overall net to gross spending fell. RAND suggests that growth in rebates is leading to relative decreases in net prices but that this decrease may not be reflected in lower cost-sharing for patients.

Private health insurance coverage is the largest source of prescription drug coverage for Americans. As summarized above, research has found that higher gross prices for certain specialty drugs appear to have been a significant factor in recent increases in drug spending, spending at net prices was growing at a slower rate than spending at gross prices, and spending at both kinds of prices was growing faster than drug volume alone. Understanding trends in drug prices paid by private health insurance plans and issuers

[aa] See Figure 5.7, Panel A in the RAND Background Report.

is, therefore, becoming increasingly important. Previously, no regular data source existed, however, that tracks drug prices and rebates in the private health insurance coverage market. The new results from RxDC are a valuable first contribution to understanding prescription drug rebates in the private health insurance market. Going forward, data quality should improve as submitting entities become more accustomed to gathering and submitting their data and as the Departments consider if any changes should be made to the RxDC requirements. These changes may allow for deeper analyses of the relationships between drug spending and premiums.

## Appendix A. Ratio of Net to Gross Spending by Geography in the 2020 and 2021 RxDC Data

| Geography | RxDC Reporting Level Combinations (count in millions) | Gross Spending 2020 ($ millions) | Net to Gross Ratio 2020 | Gross Spending 2021 ($millions) | Net to Gross Ratio 2021 |
|---|---|---|---|---|---|
| All geographies | 17,493 | 190,006 | 0.795 | 199,083 | 0.779 |
| Alabama | 110 | 2,742 | 0.804 | 3,098 | 0.777 |
| Alaska | 51 | 303 | 0.812 | 327 | 0.803 |
| Arizona | 182 | 2,670 | 0.786 | 2,261 | 0.762 |
| Arkansas | 105 | 1,627 | 0.810 | 1,840 | 0.798 |
| California | 551 | 15,362 | 0.830 | 14,141 | 0.809 |
| Colorado | 169 | 2,393 | 0.838 | 2,280 | 0.822 |
| Connecticut | 316 | 3,067 | 0.787 | 3,453 | 0.754 |
| Delaware | 217 | 962 | 0.793 | 1,017 | 0.777 |
| District of Columbia | 87 | 4,383 | 0.780 | 4,643 | 0.765 |
| Florida | 1,456 | 10,294 | 0.791 | 11,558 | 0.772 |
| Georgia | 374 | 6,384 | 0.788 | 6,531 | 0.775 |
| Guam | 10 | 64 | 0.819 | 69 | 0.797 |
| Hawaii | 42 | 1,025 | 0.813 | 1,066 | 0.803 |
| Idaho | 82 | 864 | 0.929 | 766 | 0.906 |
| Illinois | 685 | 8,718 | 0.769 | 10,122 | 0.756 |
| Indiana | 640 | 2,076 | 0.785 | 2,024 | 0.768 |
| Iowa | 157 | 1,285 | 0.805 | 1,415 | 0.794 |
| Kansas | 141 | 1,202 | 0.756 | 1,304 | 0.746 |
| Kentucky | 217 | 2,034 | 0.808 | 2,479 | 0.783 |
| Louisiana | 201 | 2,647 | 0.821 | 2,876 | 0.787 |
| Maine | 85 | 775 | 0.813 | 532 | 0.799 |
| Maryland | 252 | 5,198 | 0.792 | 5,681 | 0.779 |
| Massachusetts | 228 | 4,493 | 0.794 | 5,203 | 0.782 |
| Michigan | 453 | 3,990 | 0.787 | 3,921 | 0.791 |
| Minnesota | 129 | 5,986 | 0.796 | 6,089 | 0.774 |
| Mississippi | 107 | 662 | 0.790 | 762 | 0.750 |
| Missouri | 233 | 4,055 | 0.790 | 4,237 | 0.780 |
| Montana | 99 | 263 | 0.804 | 282 | 0.790 |
| Nebraska | 86 | 962 | 0.759 | 995 | 0.743 |
| Nevada | 116 | 1,196 | 0.780 | 1,105 | 0.750 |
| New Hampshire | 60 | 814 | 0.793 | 685 | 0.780 |
| New Jersey | 321 | 5,692 | 0.763 | 6,325 | 0.742 |
| New Mexico | 68 | 630 | 0.769 | 668 | 0.763 |
| New York | 503 | 13,328 | 0.783 | 13,790 | 0.765 |
| North Carolina | 247 | 7,155 | 0.765 | 7,478 | 0.755 |
| North Dakota | 29 | 528 | 0.765 | 574 | 0.763 |

| Geography | RxDC Reporting Level Combinations (count in millions) | Gross Spending 2020 ($ millions) | Net to Gross Ratio 2020 | Gross Spending 2021 ($millions) | Net to Gross Ratio 2021 |
|---|---|---|---|---|---|
| Ohio | 1,562 | 7,583 | 0.785 | 6,729 | 0.766 |
| Oklahoma | 443 | 1,688 | 0.771 | 1,798 | 0.758 |
| Oregon | 121 | 2,002 | 0.842 | 2,084 | 0.825 |
| Pennsylvania | 455 | 7,398 | 0.766 | 7,857 | 0.754 |
| Puerto Rico | 2,085 | 816 | 0.887 | 1,582 | 0.922 |
| Rhode Island | 85 | 924 | 0.751 | 982 | 0.747 |
| South Carolina | 123 | 2,196 | 0.784 | 2,455 | 0.753 |
| South Dakota | 1,384 | 608 | 0.791 | 697 | 0.791 |
| Tennessee | 212 | 5,590 | 0.809 | 6,125 | 0.785 |
| Texas | 719 | 15,318 | 0.766 | 16,909 | 0.754 |
| Utah | 114 | 3,817 | 0.937 | 4,064 | 0.933 |
| Vermont | 29 | 243 | 0.812 | 239 | 0.781 |
| Virginia | 476 | 6,397 | 0.805 | 5,328 | 0.788 |
| Washington | 350 | 5,157 | 0.841 | 5,877 | 0.827 |
| West Virginia | 92 | 813 | 0.732 | 1,032 | 0.767 |
| Wisconsin | 353 | 3,258 | 0.786 | 3,378 | 0.772 |
| Wyoming | 67 | 300 | 0.801 | 275 | 0.784 |

Source: RAND analysis of RxDC data from the total prescription drug volume and spending template (D6) (April 26, 2023, extract).
Note: Net total spending on prescription drugs is reported as total spending in the total prescription drug volume and spending table (D6). Gross total spending is calculated as net spending plus rebates (current year total rebates/fees/other remuneration). The ratio of net spending to gross spending is reported for RxDC reporting level combinations for which data was submitted by a single reporting entity; and further restricted to combinations reporting >$0 in gross total spending by the same entity in both reference years. U.S. Virgin Islands and Northern Mariana Islands omitted due to small sample size (N<10). RAND warns that the data for each analysis are not necessarily representative of the entities who were required to submit data nor of the entities who actually submitted data across all templates.

## Endnotes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