



PROJECTIONS OF THE PRESCRIPTION DRUG SHARE OF NATIONAL HEALTH EXPENDITURES INCLUDING NON-RETAIL

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Table of Contents

BACKGROUND	1
FINDINGS	2
DISCUSSION	3
APPENDIX: DATA AND METHODS	5

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Background

Each year the Centers for Medicare & Medicaid Services (CMS) releases a ten-year projection of national health expenditures (NHE) that includes the prescription drug component. In these data, prescription drug spending refers to what was paid at retail for the drugs, net of manufacturer rebates. There is also substantial “non-retail” spending on prescription drugs that is included in the CMS data, but not separately identifiable. This consists of prescription drugs that are administered as a part of a physician visit, or during a hospital or nursing home stay. The cost of these drugs is built into the charge for the visit or stay and shows up in the CMS data as spending on physician, hospital, and nursing home services.

The [most recent CMS projection](#) was released in February 2019 and covers 2018 through 2027. This data brief augments the CMS projection with an estimate of non-retail prescription drug spending to form a projection of total (retail plus non-retail) spending as a share of NHE. This represents the fifth time we have added a non-retail component to the CMS projection.¹ The primary data source for the non-retail estimates is the annual IQVIA (formerly IMS) report, [Medicine Use and Spending in the U.S.](#) The IQVIA report provides annual data on the dollar value of wholesaler revenues from sales of prescription drugs to retail outlets and to non-retail institutions (hospitals, physician offices, etc.).

Our approach to estimating the non-retail component builds upon the detailed methodology described in last year’s report with modifications to accommodate changes in the data made available in the 2019 IQVIA report. Details on the methodology are provided in the appendix.

¹ Previous projections were published in October 2014, August 2015, May 2017, and [June 2018](#).

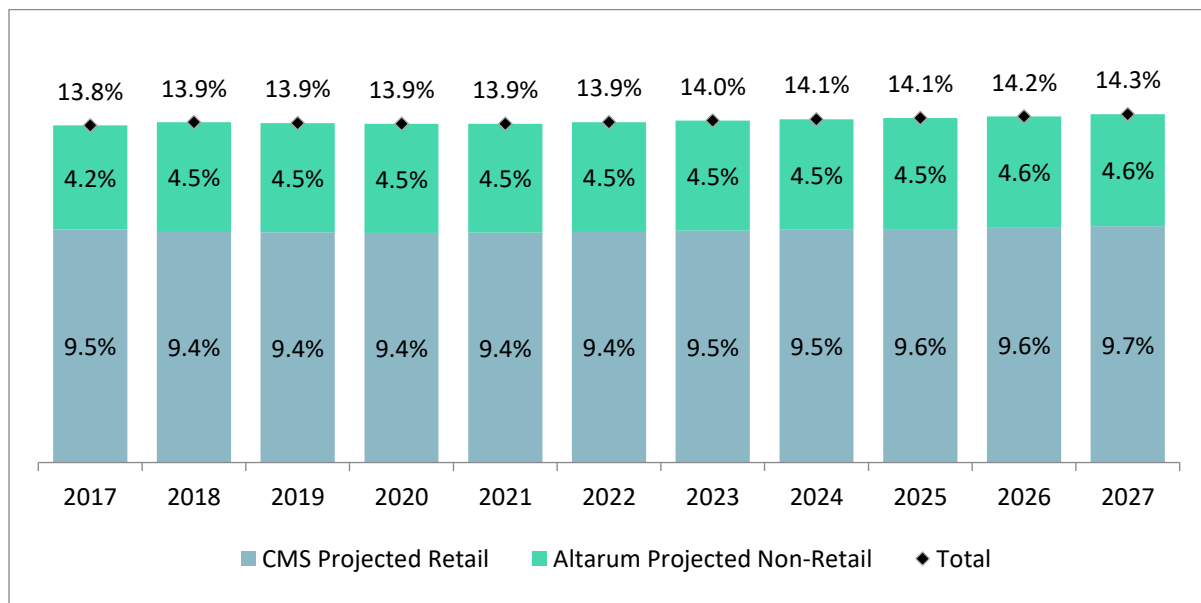


Findings

Exhibit 1 presents the ten-year projection with 2017 added to provide the most recent official CMS health account data point. As shown, CMS projects retail spending on prescription drugs growing from 9.5% of NHE in 2017 to 9.7% in 2027. We estimate that non-retail spending on prescription drugs accounted for 4.2% of NHE in 2017, growing to 4.6% in 2027. This results in total spending on prescription drugs as a share of NHE growing from 13.8% to 14.3% between 2017 and 2027. Results are lower than last year's projection which showed the prescription drug share of NHE growing from 14.0% in 2017 to 15.4% in 2026. This reduction is due to a lowering of the CMS projections of retail prescription drug spending as a share of NHE. In last year's release, the CMS figure was 9.7% in 2017 and 10.6% in 2026. As shown in Exhibit 1, these figures dropped to 9.5% and 9.7% in the current CMS projections.

EXHIBIT 1

Prescription Drug Share of National Health Expenditures – 2017 to 2027



Source: Retail share is from February 2019 CMS Office of the Actuary NHE projection (2017 is CMS historical). Non-retail share is Altarum estimate.

In dollar terms, total spending on prescription drugs is projected to increase from \$481 billion in 2017 to \$851 billion in 2027 (Exhibit 2). The retail component grows from \$333 billion to \$577 billion while the non-retail component grows from \$148 billion to \$274 billion. During this time, national health expenditures are projected to grow from \$3.5 trillion to \$6.0 trillion.



EXHIBIT 2

Prescription Drug Spending and National Health Expenditures 2016 – 2026 (\$billions)

Year	Retail	Non-Retail	NHE
2017	333	148	3,492
2018	344	164	3,647
2019	360	171	3,823
2020	379	180	4,031
2021	400	190	4,255
2022	425	202	4,502
2023	452	215	4,767
2024	481	228	5,049
2025	511	243	5,345
2026	543	258	5,651
2027	577	274	5,963

Source: Retail and NHE are from February 2019 CMS Office of the Actuary NHE projection (2017 are CMS historical). Non-retail is Altarum estimate.

In the national health accounts, non-retail prescription drug spending is included in health care services spending. In 2018, we estimate non-retail prescription drug spending was \$164 billion and was distributed across health care services categories in the percentages shown below:

- ▲ Hospitals: 26.3%
- ▲ Physician and Clinical Services: 58.3%
- ▲ Nursing Homes: 11.5%
- ▲ Home Health: 3.9%

Discussion

As noted above, projections of national health spending and its prescription drug retail component are taken directly from the February 2019 CMS release. In the CMS data, about 85% of national health expenditures are for health care goods and services with the remaining 15% including items such as the costs of administering public and private insurance, and spending on public health, medical research, structures, and equipment. Retail spending on prescription drugs represents what was paid at retail minus an estimate of manufacturer rebates. The non-retail component represents our estimate of what hospitals, physician offices/clinics, and nursing homes were paid for prescription drugs administered during a patient stay or visit, minus any associated manufacturer rebates.



Presenting prescription drug spending as a share of national health expenditures provides consistency with the way data are reported in the annual CMS NHE releases. It is also useful to consider the prescription drug share of spending on health care goods and services, which, as noted above, account for about 85% of national health expenditures. In this case, the projected retail shares exceed 11% while the total shares, including non-retail, move above 17% in the latter years of the projection.

Our estimate of the non-retail component in 2017 is \$148 billion. This is \$16 billion more than the IQVIA non-retail invoice spending figure of \$132 billion for 2017 (Exhibit A-2). The IQVIA figure represents what institutions paid for the prescription drugs administered during patient stays and visits, prior to any rebates, while our figure is an estimate of what was actually paid by patients and their insurers. The \$16 billion dollar difference represents the markup by hospitals, physicians and clinics, and nursing homes, minus rebates.

Our estimate of the retail component in 2017 is \$333 billion, taken directly from CMS. This turns out to be identical to the IQVIA figure for retail invoice spending which represents what retailers paid to wholesalers prior to rebates. This implies that the retail markup was essentially offset by rebates.²

² For more information on rebates and their impact, see Roehrig C, [The Impact of Prescription Drug Rebates on Consumers and Insurers](#), April 2018.



Appendix: Data and Methods

Retail Shares of NHE. For each year from 2017 through 2027 we used the February 2019 CMS projections of NHE and prescription drug spending.

Non-Retail Shares of NHE. We wish to estimate non-retail spending adjusted for rebates. Our primary data sources for the non-retail estimate are the 2018 and 2019 editions of the annual IQVIA reports on Medicine Use and Spending in the U.S. The data shown in Exhibit A-1 are from the 2018 edition since this level of detail was not provided in the 2019 edition. Invoice spending refers to what wholesalers were paid for drugs they sold to retailers (pharmacies) and non-retailers (hospitals, physicians, nursing homes). The net spending figures refer to invoice spending minus rebates, coupons, and other off-invoice discounts. Data in Exhibit A-2 are from the 2019 edition and are the source for invoice spending in 2018 for retail and non-retail (net spending was not provided in the 2019 report). The detail on non-retail channels in this exhibit were used to estimate how non-retail spending was split across health service categories in 2018.

For 2017, we begin with non-retail invoice spending of \$132 billion from Exhibit A-2. This figure represents the acquisition cost of the drugs on the part of non-retailers, prior to rebates. We inflate this figure to account for non-retailer markups and then subtract rebates. As discussed in our [2018 report](#), the retail markup has been estimated to be roughly 22% of total retail sales. In the absence of suitable data for estimating the overall non-retail markup, we assume it is the same as the retail markup. Thus, for 2017 our estimate of non-retail spending (prior to rebates) is invoice spending (\$132 billion) divided by $(1-.22) = \$169$ billion. Our estimate of non-retail rebates in 2017 is \$21 billion, computed as the difference between invoice spending (\$134 billion) and net spending (\$113 billion) from Exhibit A-1. Our 2017 estimate of non-retail sales, net of rebates, is \$169 billion minus \$21 billion = \$148 billion.

For 2018, IQVIA did not provide net non-retail spending so we could not directly estimate rebates. Instead we assumed that rebates in 2018 would be the same percentage of invoice spending as it was in 2017 (16%). This yielded an estimate of \$23 billion in non-retail rebates in 2018. Following the steps detailed above for 2017, we estimated non-retail sales, net of rebates, to be \$164 billion in 2018. For the years 2019 through 2027, we assumed that non-retail sales, net of rebates, would grow at the same rate as retail sales net of rebates.³

³ This is similar to what we assumed in last year's projections and is discussed in somewhat more detail in that report.



Percent distribution of non-retail prescription drug spending across national health account services

categories. In the national health accounts, non-retail prescription drug spending is included in health care services spending. To develop a rough estimate of how non-retail spending is allocated across service categories in the health accounts, we used the IQVIA invoice spending by channel data shown in Exhibit A-2 below. Non-retail sales to hospitals will be included in hospital spending in the national health accounts. Non-retail sales to clinics, the largest category, are included in the physician and clinical services component of health accounts (Non-retail sales to clinics that are owned and operated by hospitals are counted as sales to hospitals in the IQVIA data). Retail sales to long term care facilities will be included as nursing home revenues and sales to home health care will be included as home health care revenues. Sales to federal facilities, HMOs, and miscellaneous (this includes prisons) are likely split between hospitals and clinics. In 2017, when these categories are split between hospitals and clinics using the non-federal hospital and clinic proportions, the following shares result for non-retail prescription drug spending across the national health account categories:⁴

- ▲ Hospitals: 27.5%
- ▲ Physician and Clinical Services: 57.1%
- ▲ Nursing Homes: 12.4%
- ▲ Home Health: 3.0%

EXHIBIT A-1

Retail and Non-Retail Invoice Spending: Full and Net (\$billion)

	2013	2014	2015	2016	2017
Retail Invoice	239	274	307	320	319
Retail Net	178	197	212	216	212
Non-Retail Invoice	94	106	120	127	134
Non-Retail Net	81	88	99	107	113

Source: Medicines Use and Spending in the U.S. 2017, IQVIA, April 2018

⁴ For federal facilities, HMOs, and miscellaneous, 33% of the share was allocated to hospitals and 67% to clinics based upon the relative shares of non-federal hospitals and clinics in 2017.



EXHIBIT A-2

Retail and Non-Retail Invoice Sales by Channel (\$billion)

	2014	2015	2016	2017	2018
Total Spending	380.2	426.7	446.5	454.7	482.0
Retail Channels	273.2	306.7	322.0	322.7	336.4
Chain Stores	122.2	131.1	138.4	135.4	140.0
Mail Service	82.3	98.6	105.8	111.5	120.7
Independent	42.2	48.2	49.8	49.5	50.1
Food Stores	26.6	28.9	28.0	26.3	25.7
Institutional Channels	107.0	120.0	124.5	132.0	145.6
Clinics	49.2	57.2	64.1	71.3	80.8
Non-Federal Hospitals	30.4	33.5	34.4	34.2	36.4
Long Term Care	16.3	16.6	16.5	16.6	16.8
Federal Facilities	2.8	2.7	2.8	2.6	2.7
Home Health Care	3.4	3.9	3.8	4.2	5.6
HMO	3.9	4.9	1.7	1.8	2.0
Miscellaneous	1.0	1.2	1.3	1.4	1.3

Source: Medicines Use and Spending in the U.S. 2018, IQVIA, May 2019