MILLIMAN REPORT

Analysis of commercial and Medicare outpatient drug spend at 340B participating hospitals

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Katie Holcomb, FSA, MAAA
Jake Klaisner, FSA, MAAA
Philip Nelson, FSA, CERA, MAAA

Ivanna Ulin

Commissioned by Pharmaceutical Research and Manufacturers of America (PhRMA)

Milliman

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Executive summary

Milliman, Inc. (Milliman) was commissioned by Pharmaceutical Research and Manufacturers of America (PhRMA) to analyze outpatient hospital pharmacy spend at 340B and non-340B hospitals. This study builds on previous research conducted by the U.S. Government Accountability Office (GAO) and Milliman.[1,2,3] In June 2015, the GAO published a study comparing Medicare beneficiary hospital outpatient drug spending at 340B hospitals and non-340B hospitals. The GAO report found that Medicare's per-beneficiary pharmacy spending was significantly higher at 340B hospitals, even after adjusting for patient health status.

In 2018, Milliman conducted an analysis commissioned by PhRMA to understand if similar patterns existed within a commercially insured population. This investigation employed Milliman's proprietary commercial claims dataset and followed a methodology similar to that used in the 2015 GAO report. Milliman refreshed this analysis for PhRMA in 2022.

This new report provides updated findings, now utilizing 2023 commercial data to analyze drug spending among 340B hospitals for the commercially insured population. Additionally, this report also expands the analysis to compare spending under Medicare using 2022 data, the most recent year of full-market data available. The Medicare data also includes comparisons across various member demographic characteristics.

Key observations from this analysis include:

- **340B disproportionate share hospitals (DSH) have higher outpatient costs**: Across all sources of coverage (commercial health insurance, Medicare Advantage [MA], and Medicare fee-for-service [FFS]), 340B DSH hospitals consistently have higher drug costs per outpatient member and per outpatient drug utilizer compared to non-340B hospitals. This difference cannot be explained by differences in patient health, teaching status, or other patient characteristics analyzed. Table 1 displays the ratios of 340B DSH to non-340B hospitals[4] for per-outpatient member metrics:

TABLE 1
OUTPATIENT DRUG SPEND PER OUTPATIENT HOSPITAL PATIENT

	340B DSH	NON-340B DSH	RATIO
COMMERCIAL (2023)	$652	$220	3.0
MEDICARE FFS (2022)	$961	$360	2.7
MEDICARE ADVANTAGE (2022)	$796	$203	3.9

- **Unique drug mix:** Across all markets, 340B DSH hospitals consistently have the highest average cost per outpatient pharmacy claim. The primary reason for this phenomenon appears to be a significantly greater share of higher-cost drugs dispensed at 340B DSH hospitals compared to other hospital types. Due to standardized reimbursement in Medicare, the prices Medicare pays are similar regardless of drug mix.

- **Differences in costs per outpatient patient has been increasing over time:** In the commercial market, drug cost per outpatient hospital patient in 2023 was $432 higher at 340B DSH hospitals than at non-340B DSH

[1] U.S. Government Accountability Office (June 2015). Medicare Part B Drugs: Action Needed to Reduce Financial Incentives to Prescribe 340B Drugs at Participating Hospitals. Report to Congressional requesters. Retrieved April 27, 2025, from: https://www.gao.gov/assets/d15442.pdf

[2] Hunter, M., Holcomb, K. & Kim, C. (September 2022). Analysis of 2020 commercial outpatient drug spend at 340B participating hospitals. Milliman white paper. Retrieved April 27, 2025, from: https://www.milliman.com/en/insight/2020-outpatient%20drug%20spend%20at%20340b%20hospitals

[3] Gomberg, J., Hunter, M. & Kim, C. (March 2018). Commercial payers spend more on hospital outpatient drugs at 340B participating hospitals. Retrieved April 27, 2025, from: https://www.milliman.com/en/insight/Commercial-payers%20spend%20more%20on%20hospital%20outpatient%20drugs%20at%20340B%20participating%20hospitals

[4] Non-340B DSH hospitals qualify as DSH by having a disproportionate share adjustment greater than 11.75% but are either disqualified from 340B eligibility due to being for-profit, failing to meet other eligibility requirements, or electing not to participate in the 340B program.

hospitals. Prior Milliman reports found this difference to be $365 in 2020[5] and $298 in 2015.[6] This represents an increase of 44% between 2015 and 2023 relative to 22% medical care CPI-U over the same time period.[7]

Background

The 340B program, overseen by the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Services (HHS), enables participating hospitals to purchase certain outpatient medications at reduced prices. These hospitals, known as 340B hospitals, qualify for the program based on criteria, such as serving a disproportionate share of low-income Medicare and Medicaid patients.[8] Any patient of a 340B covered entity is eligible for 340B drugs.[9,10]

340B hospitals save an average of 57% compared to list prices on pharmaceutical spend for 340B drugs, with some prices as low as a penny.[11] Today, providers within the 340B program keep these savings, retaining the difference between the reimbursement amount and the drug's acquisition cost. Though this dynamic is not unique to the 340B program, it creates financial incentives for 340B hospitals to prefer more expensive medications. Consequently, hospitals may be inclined to treat patients with a higher volume of and / or more expensive outpatient medications.[12,13]

In June 2015, the Government Accountability Office (GAO) published a report examining the Medicare cost differences in hospital outpatient department pharmacy spending per member between 340B and non-340B hospitals. This analysis evaluated per beneficiary drug spending for separately payable outpatient drugs at hospitals that treated at least one Medicare beneficiary during the year. The study used Centers for Medicare and Medicaid Services (CMS) Medicare claims data from 2008 and 2012, focusing on hospitals whose 340B status remained unchanged during these periods. The GAO report found that Medicare's per-beneficiary pharmacy spending was significantly higher at 340B hospitals ($144 versus $60 at non-340B DSH hospitals), even after adjusting for patient health status.[14]

In September 2022, Milliman published a PhRMA-commissioned report analyzing commercial market spending on hospital outpatient drugs at 340B participating hospitals. Key findings from the study included:[15]

- Per-patient pharmacy spending at 340B DSH hospitals was more than two and a half times higher than at non-340B DSH hospitals.
- Per-drug-utilizer pharmacy spending at 340B DSH hospitals was more than three times that of non-340B hospitals.

While 340B hospitals purchase drugs at the same statutory price for all their patients, their reimbursement structures by payer can vary widely. Medicare fee-for-service has a defined reimbursement structure used for all hospitals, but commercial reimbursement varies from payer to payer and from hospital to hospital. To compensate for this variability, we inferred national average payer fee levels based on national average Medicare fees and a multiplier to account for higher commercial reimbursement. This is described further in the Methodology and Assumptions section.

[5] Hunter, M., Holcomb, K. & Kim, C. (September 2022). Analysis of 2020 commercial outpatient drug spend at 340B participating hospitals.

[6] Gomberg, J., Hunter, M. & Kim C. (March 2018). Commercial payers spend more on hospital outpatient drugs at 340B participating hospitals.

[7] U.S. Bureau of Labor Statistics (April 2025). Consumer Price Index for All Urban Consumers. Retrieved April 27, 2025, from: https://data.bls.gov/timeseries/CUUR0000SAM?output_view=data

[8] Health Resources and Services Administration (June 2024). 340B Eligibility. Retrieved April 27, 2025, from: https://www.hrsa.gov/opa/eligibility-and-registration

[9] 340B Health (2025). 340B Drug Pricing Program Overview. Retrieved April 27, 2025, from: https://www.340bhealth.org/members/340b-program/overview/

[10] Health Resources and Services Administration. FAQs. Retrieved April 27. 2025, from: https://www.hrsa.gov/opa/faqs

[11] Berkeley Research Group (May 2024). Measuring the Relative Size of the 340B Program: 2022 Update. Retrieved April 27, 2025, from: https://media.thinkbrg.com/wp-content/uploads/2024/05/13163125/340BProgram_Relative_Size_WP_2022Update.pdf

[12] U.S. Department of Health and Human Services (2025) 340B Glossary. Office of Pharmacy Affairs. Retrieved April 27, 2025, from: https://340bregistration.hrsa.gov/help/CoveredEntity/Links/340B_Glossary.htm

[13] Community Oncology Alliance (April 2017). The 340B Drug Discount Program in Review: A Look at the Data and Evidence to Date. Retrieved April 27, 2025, from: https://340breform.org/wp-content/uploads/2021/04/340B-DataResearchSummary-Final.pdf

[14] U.S. Government Accountability Office (June 2015). Medicare Part B Drugs: Action Needed to Reduce Financial Incentives to Prescribe 340B Drugs at Participating Hospitals.

[15] Hunter, M., Holcomb, K. & Kim, C. (September 2022). Analysis of 2020 commercial outpatient drug spend at 340B participating hospitals.

Results

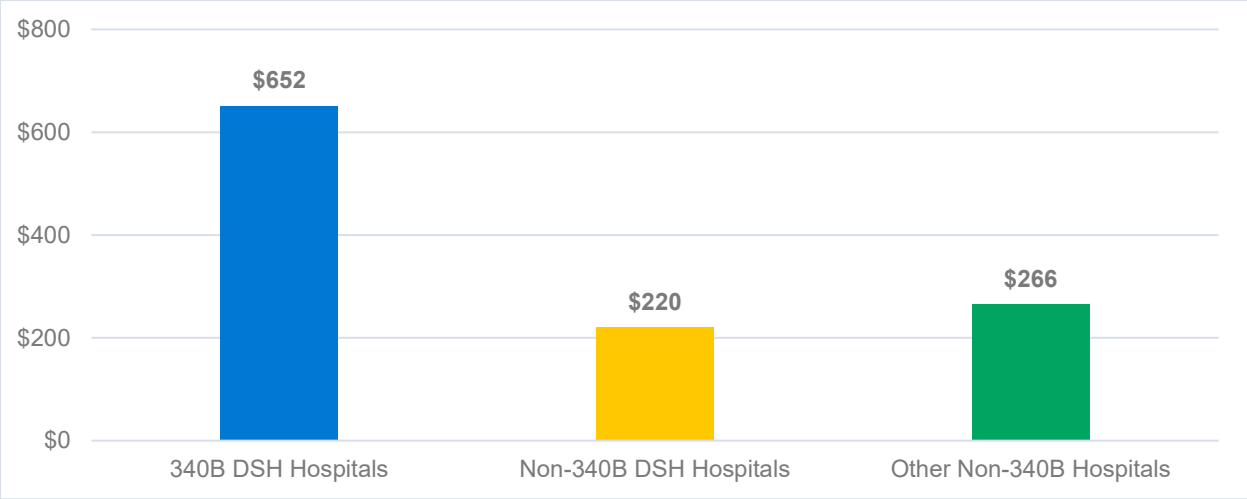
We analyzed the per-patient pharmacy spend on hospital outpatient medications and found that patients treated at 340B hospitals consistently have higher spending compared to non-340B hospitals. This trend persists across different patient cohorts, hospital teaching status, and markets (commercial, MA, and FFS). Additionally, we explored spending variations by beneficiary race / ethnicity and income status in Medicare, finding that 340B DSH hospitals consistently have higher drug costs among these cohorts as well. These results are shown in Appendix B and Appendix C, respectively. These findings underscore the financial implications of the 340B program on outpatient drug spending and suggest that the program may incentivize the use of more expensive medications.

COMMERCIAL MARKET

Comparison across 340B DSH, non-340B DSH, and other non-340B hospitals

At 340B DSH hospitals, the average annual spend per patient was $652, compared to $220 and $266 at non-340B DSH and other non-340B hospitals, respectively.

FIGURE 1a: AVERAGE 2023 OUTPATIENT DRUG SPEND PER OUTPATIENT HOSPITAL PATIENT – COMMERCIAL MARKET



To further understand the factors contributing to this spending difference, we examined differences in health status using risk scores, which did not fully account for the disparity. Though risk scores are not specific to outpatient pharmacy spending, health status does not appear to explain the difference in 340B spend, as patients at both 340B and non-340B hospitals had similar risk scores. Patients utilizing 340B DSH hospitals had risk scores approximately 8% higher than non-340B DSH patients and only 2% higher than patients at other non-340B hospitals.

The costs in Figure 1a are presented for all patients receiving outpatient services from the hospital, consistent with the GAO methodology. To account for the possibility that 340B DSH hospitals may treat more patients who require more or more expensive medications, we also analyzed costs specifically across patients receiving outpatient pharmacy services, rather than any outpatient service. This approach normalizes for differences in the number of drug utilizers and focuses solely on the spending for outpatient drugs per patient using medications. Consistent with the results of previous reports, we found the per outpatient pharmacy utilizer costs at 340B DSH hospitals were significantly higher compared to those at non-340B hospitals. At 340B DSH hospitals, the average annual spend per outpatient pharmacy utilizer was $1,692, compared to $527 and $623 at non-340B DSH and other non-340B hospitals, respectively.

FIGURE 1b: AVERAGE 2023 OUTPATIENT DRUG SPEND PER OUTPATIENT HOSPITAL PATIENT – COMMERCIAL MARKET

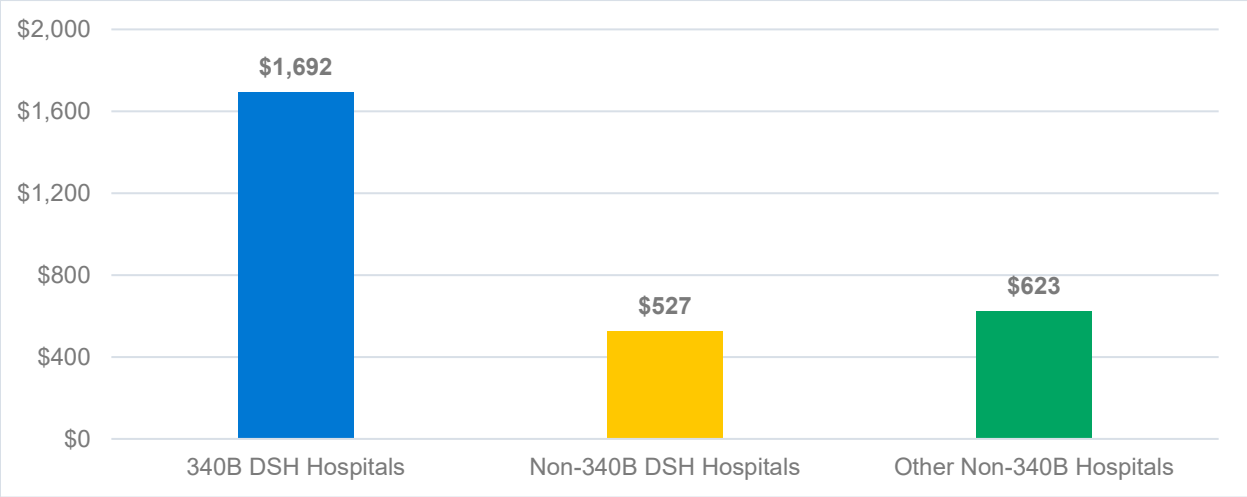
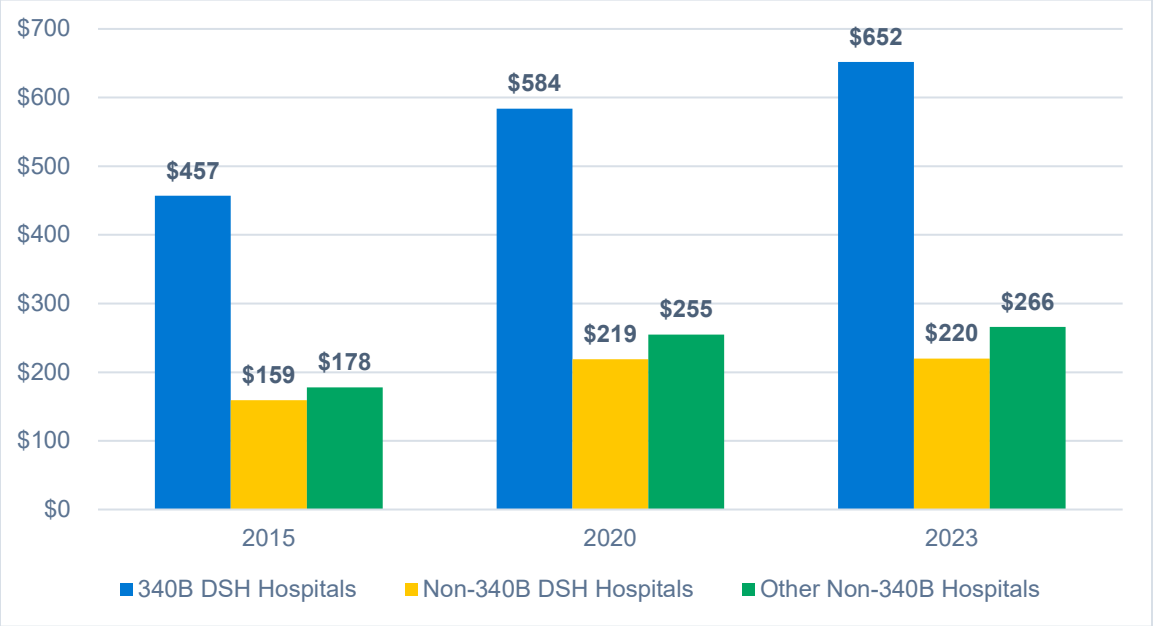


Figure 1b shows a similar relationship, but a significantly larger difference in spending between 340B and non-340B hospitals compared to Figure 1a. When limiting to the cohort of patients receiving outpatient pharmacy services, we observed wider differences in health status in our data. 340B DSH hospital patients had approximately 12% higher risk scores than non-340B DSH patients and approximately 7% higher risk scores than other non-340B hospital patients. While this is greater than the comparison among all outpatient patients, it is not significant enough to account for the cost differences observed.

Results over time

Milliman published prior versions of this analysis based on 2015 and 2020 commercial claims. We note, there has been a steady growth in the absolute dollar difference in outpatient drug spend per patient between 340B and non-340B hospitals. On a percentage basis, 340B DSH hospital spend per patient increased at a greater rate than non-340B hospitals. Figure 2 below shows the relationships over time:

FIGURE 2: AVERAGE 2015, 2020, AND 2023 OUTPATIENT DRUG SPEND PER OUTPATIENT HOSPITAL PATIENT – COMMERCIAL MARKET



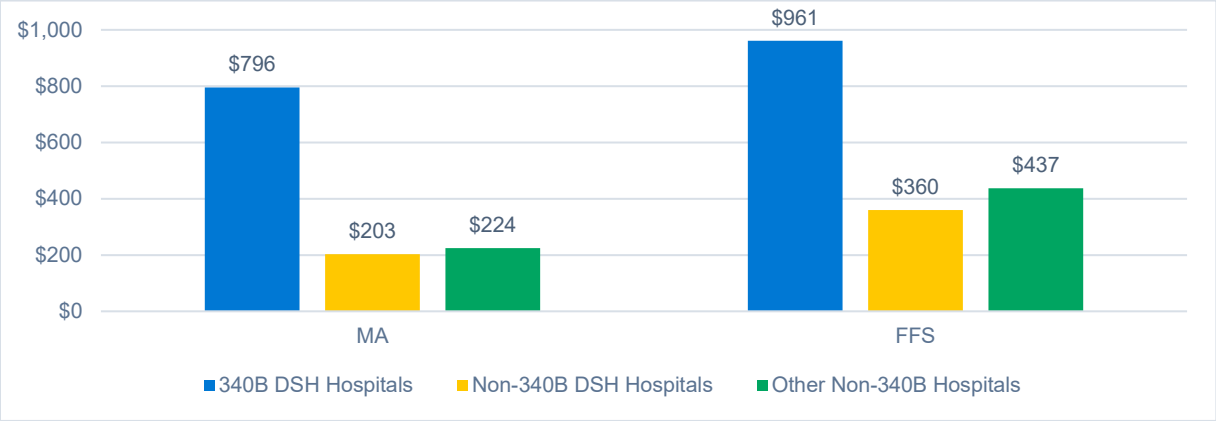
MEDICARE MARKET

We also analyzed the same metrics in the Medicare market, bifurcating the market between patients enrolled in Medicare Advantage (MA) and those covered by Medicare FFS (a.k.a. traditional Medicare). We used 2022 data, which is the most recent year available, and assumed all MA reimbursement is equal to FFS. Similar to the commercial market, we observed that per-patient and per-utilizer pharmacy spending is higher at 340B DSH hospitals compared to non-340B hospitals in both MA and FFS.

Comparison of 340B DSH, non-340B DSH, and other non-340B hospitals

Figure 3a shows the average spend on outpatient drugs per outpatient hospital patient by hospital type for both MA and FFS. Similar to the commercial results, per-patient pharmacy spend at 340B DSH hospitals is two to four times higher than at non-340B hospitals across both MA and FFS. 340B DSH hospital per-patient pharmacy spend is $796 and $961 for MA and FFS markets, respectively. Non-340B average spend varies by DSH status and market but is consistently lower, ranging from $203 to $437 per patient per year.

FIGURE 3a: AVERAGE 2022 OUTPATIENT DRUG SPEND PER OUTPATIENT HOSPITAL PATIENT – MEDICARE MARKET



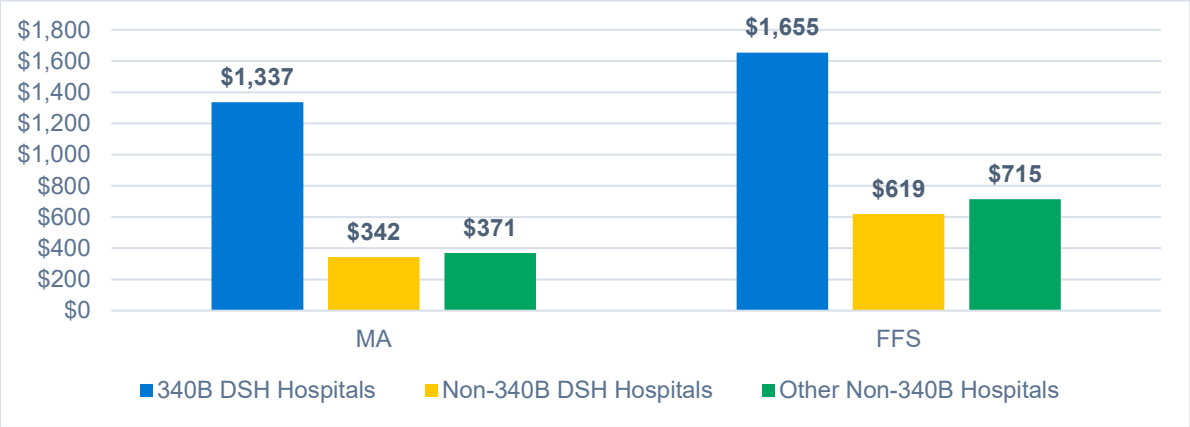
Generally, the dollar amounts in the figure appear close to the commercial amounts, with MA tracking very closely to commercial, and FFS being higher. This is driven by offsetting differences in utilization and reimbursement. The vast majority of outpatient hospital drug claims under Medicare are reimbursed at the average sales price (ASP) plus 6%,[16] which is considerably lower than the average commercial rate. However, if we multiply by the average Medicare-to-commercial conversion factor to put these values on an average commercial reimbursement basis, the resulting amounts would be substantially higher than the commercial market results. This is to be expected, as Medicare-eligible patients tend to utilize more healthcare services relative to a commercially insured population.

As in the commercial market, we compared risk scores among these cohorts, which does not explain the difference in 340B spend—patients at both 340B and non-340B hospitals had similar risk scores. MA patients utilizing 340B DSH hospitals had between 1% to 7% higher risk scores relative to patients in the other hospital types. FFS 340B patients had a much wider risk score range, between 6% lower to 28% higher risk scores relative to other hospital types. While risk scores are not a perfect proxy for expected differences in medication spending, these risk score differentials do not explain the approximately four and two times differential in costs per patient seen in the MA and FFS markets, respectively.

Like Figure 1b, Figure 3b compares the annual outpatient pharmacy costs per utilizer of outpatient pharmacy services at 340B DSH hospitals, non-340B DSH hospitals, and other non-340B hospitals. Similar to the commercial market, when limiting the cohort to patients receiving only outpatient pharmacy services, we observed slightly wider differences in health status, but significantly wider differences in spending.

[16] Note, providers ultimately collect ASP plus 4.3% after accounting for the impact of sequestration.

FIGURE 3b: AVERAGE 2022 OUTPATIENT DRUG SPEND PER DRUG UTILIZER – MEDICARE MARKET



Comparison across demographics in Medicare

Our analysis of the Medicare market also stratifies results by patient race / ethnicity and income status, which are not available in our commercial data. It is important to note that inferences relating to average pharmacy spend per patient or utilizer for different races / ethnicities across different hospital types may be confounded by geographical considerations. For instance, some races / ethnicities might be concentrated in different geographical regions, thus impacting a patient's ability to access certain hospital types.

Though variability exists by race / ethnicity, consistent with our other findings, 340B DSH hospitals have a higher spend per patient when compared to other hospital types across all races / ethnicities. We analyzed the variance among the reported races / ethnicities separately between MA and FFS populations and found similar relationships among the hospital types. These results can be found in Appendix B.

340B DSH hospitals also have higher spend per patient for both low-income (LI) patients and non-low-income (NLI) patients. These results are included in Appendix C.

Discussion

Below, we discuss important items to consider when comparing drug utilization and costs for 340B and non-340B hospitals, as well as recent trends that have occurred in the outpatient pharmacy industry.

Drug mix and pharmacy utilization: It is important to understand what may cause a differential in cost when looking at an aggregate level between hospital types. For example, the same drug may be contracted at a higher cost (on average) at one hospital type compared to another. However, it could also be the case that a different mix of drugs is dispensed at one setting relative to another.

As shown above in Figures 1a through 3b, 340B DSH hospitals have higher average outpatient drug claims costs relative to other hospital types. We found that the primary driver of this spending difference was drug mix: 340B DSH hospitals administered a much higher proportion of higher-cost outpatient drugs than non-340B hospitals for both commercial and Medicare patients. Figure 4 shows these amounts.

FIGURE 4
AVERAGE COST PER DRUG CLAIM BY HOSPITAL TYPE

MARKET	340B DSH	NON-340B DSH	OTHER NON-340B
Commercial (2023)	**$447**	**$166**	**$197**
Medicare (2022)	**$227**	**$82**	**$98**

The results displayed in Table 2 show that 340B DSH costs per drug claim range from approximately 126% to 177% higher than at non-340B hospitals, depending on market and DSH status. In the Medicare market, outpatient drugs are almost always reimbursed at the average sales price (ASP), plus an additional 6%. Because direct drug costs do not explain average claim costs differences, the differences are due to a larger proportion of higher-cost outpatient drugs being administered at 340B DSH hospitals. When normalizing for differences in drug mix between hospital type, we observed that 340B DSH hospitals generally have slightly lower drug prices in the commercial market, though presumably much higher markups due to the significant purchasing discounts available through the 340B program.

In the commercial market, drug reimbursement differences only explain a small portion (less than 10%) of the total average drug claim cost differences, which implies that the rest of the differential is due to the mix of drugs being dispensed.

One example of differences in drug mix is the use of biosimilars. Biosimilar drugs typically have lower list prices than their corresponding reference products. Previous research has shown that biosimilar utilization is lower at 340B outpatient hospitals. Since providers' compensation is tied to the price of the drug, and 340B providers receive a larger margin due to lower acquisition costs, they may be incentivized to utilize medicines that have a higher price.[17]

Teaching hospital status: 340B hospitals are more likely to be teaching hospitals, so we also evaluated whether a hospital's status as a teaching institution affects the average per-patient spend between 340B and non-340B hospitals. Across all hospital teaching statuses analyzed (major teaching, other teaching, and non-teaching), we found similar relationships to those shown in Figures 1a and 1b. The 340B DSH annual spend is approximately two to three times greater than at non-340B hospitals. Teaching status does not explain the difference in outpatient pharmacy spending between 340B DSH hospitals and non-340B hospitals. Appendix D contains the results for each market by hospital teaching status.

Differences in hospital locality (urban/suburban and rural): Rural hospitals account for one-third of all hospitals in most states.[18] Differences in outpatient drug spending between urban/suburban and rural areas may reflect differences due to factors, such as access to providers and pharmacies, population demographics, and health system infrastructure. Therefore, we analyzed outpatient drug spend for 340B and non-340B hospitals, separately for urban/suburban and rural-designated providers to examine whether an urban/suburban or rural provider status could help explain the cost variance

[17] Holcomb, K. and Chang, P. (November 2022). Biosimilar utilization at 340B and non-340B outpatient hospitals in the commercial market. Milliman white paper. Retrieved April 27, 2025, from: https://www.milliman.com/en/insight/Biosimilar-Utilization-at-340B-and-Non-340B-Outpatient-Hospitals-in-the-Commercial-Market

[18] https://www.kff.org/health-costs/issue-brief/10-things-to-know-about-rural-hospitals/

between 340B and non-340B hospitals. The results, as shown in Appendix E, were consistent across both statuses and similar to the relationships presented in Figures 1a and 1b: 340B hospitals had higher costs compared to non-340B hospitals in both urban/suburban and rural settings. These observations suggest that urban/suburban and rural status does not explain the cost differences between 340B and non-340B hospitals.

Differences in health status: The health status of a population can explain variation in healthcare costs. Higher spending and utilization of more costly medications could potentially be driven by a less healthy population (i.e., if 340B hospitals serve a population with higher risk scores). However, we did not find this to be the case in the populations studied. As discussed previously, differences in risk scores were significantly smaller than the differences in spending observed.

Note that it may not be appropriate to apply a risk score adjustment to outpatient pharmacy spend alone, because risk scores are calibrated to the total cost of care. For this reason, we present results without a risk-adjustment methodology applied, though the level of risk scores observed indicates that health status differences alone do not account for the cost differentials.

Maximum fair prices (MFPs) in Medicare Part B will impact outpatient drug spending at all hospital types: Under the Medicare Drug Price Negotiation Program (MDPNP), selected products will have their prices negotiated by the federal government. For 2026 and 2027, only Part D products are subject to negotiations. The negotiated price is referred to as the maximum fair price (MFP). The outpatient drugs included in this analysis are covered by the Part B benefit in Medicare. Part B drugs will first be eligible for MDPNP in 2028. Therefore, some of these products are likely to have MFPs in 2028 and beyond. Even though MDPNP only directly applies to the Medicare market, there may be spillover effects in the commercial market either directly (were CMS to announce that MFP would be included in ASP) or indirectly (through contractual changes). This may have a similar effect as the introduction and uptake of biosimilars, contributing to ASP decreases on both selected products and their competitors. In turn, this would put downward pressure on reimbursement and margin for products with MFPs, potentially disincentivizing the prescribing of negotiated products. Margins will be narrowed for 340B providers, who today have a much wider spread between acquisition cost and reimbursement.

Methodology and assumptions

DATA SOURCES

We used Milliman's 2023 *Consolidated Health Cost Guidelines*™ (CHSD) database, the CMS Chronic Conditions Warehouse (CCW) Virtual Research Data Center (VRDC), and information regarding 2022 and 2023 340B and DSH status from the Health Resources and Services Administration (HRSA) 340B database.

The CHSD dataset includes information on over 48 million individuals covered by commercial health plans, contributed by numerous health plans nationwide. When focusing on the hospitals and members receiving outpatient hospital services in this report, the data set is reduced to approximately 16 million individuals.

The VRDC dataset includes information for 100% of Medicare beneficiaries. For this analysis, we analyzed 2022 data for both MA and FFS. We limited the data to members receiving outpatient hospital services. For Medicare Advantage claims, only utilization data is available. We estimated Medicare Advantage claim costs assuming 100% of FFS costs for each drug and type of service.

Please refer to Appendix A for the total number of hospitals included in the study. Before using the data, we validated it for consistency and overall accuracy. We also reviewed the top Healthcare Common Procedure Coding System (HCPCS) codes by expenditure to ensure they were reasonable.

INCLUSION AND EXCLUSION CRITERIA

To be included in the study, a hospital had to treat at least one patient in the hospital outpatient setting during the 2022 and 2023 calendar years for VRDC and CHSD, respectively. We limited our data to hospital outpatient department claims and classified providers by the following types:

- Acute care hospitals
- Teaching hospitals
- Disproportionate share hospitals (DSH)
- Sole community hospitals

In addition, we omitted costs associated with medication administration, as well as any other costs bundled with the outpatient pharmacy claim. The count of included hospitals varied between Medicare and commercial as we limited to hospitals with claim data within each market after applying the limiting criteria described above.

IDENTIFYING HOSPITAL TYPES

We used a combination of Medicare IDs and National Provider Identifier (NPI) numbers to identify hospitals participating in the 340B program. In order to be flagged as a 340B hospital, a hospital had to participate in the 340B program on calendar years 2022 for Medicare and 2023 for commercial. We identified DSH and non-DSH hospitals using the DSH public use file (PUF) reports from CMS.

For both the commercial and Medicare analyses, we determined which facilities were teaching hospitals based on definitions from CMS, as of November 2023. A major teaching hospital is defined as a hospital that is a member of the Council of Teaching Hospitals (COTH). Other teaching hospitals include "limited" teaching hospitals (hospitals that are not members of COTH but have at least one intern and resident) and graduate teaching hospitals.

IDENTIFYING HOSPITAL OUTPATIENT MEDICATIONS

We used Milliman's *Health Cost Guidelines*™ (*HCGs*) grouper to identify hospital outpatient medications. Milliman's grouper uses a combination of HCPCS, revenue codes, bill types, place of service, and other data to group claims. We removed any non-medication cost (i.e., administration) and vaccines from the analysis.

MEDICARE REPRICING

Every hospital has different reimbursement contracts with payers. In this analysis, we repriced all outpatient claims to a Medicare fee schedule basis to normalize for reimbursement differences. We then multiplied all claims by the overall average commercial-to-Medicare reimbursement ratio to express costs on an equivalent commercial market reimbursement basis. We calculated this ratio to be 2.18 (i.e., the average unit cost of an outpatient pharmacy hospital service in the commercial market is 2.18 times that of Medicare). We developed this ratio by taking the relativity of all

nationwide outpatient drug claims based on their actual commercial allowed amounts relative to the Medicare-repriced allowed dollars.

RISK SCORE ANALYSIS

Commercial market: To account for morbidity and demographic differences, we assessed the risk score variations among the populations treated at different hospital types using Milliman's proprietary risk model, Milliman Advanced Risk Adjusters™ (MARA™), to calculate risk scores for each member. We applied concurrent risk scores based on the members' medical diagnoses to reflect their current health status. These risk scores were calculated to estimate the expected total cost of care, using medical diagnosis codes from the cohort studied.

Medicare market: To account for morbidity and demographic differences, we assessed the risk score variations among the populations treated at different hospital types using CY2022 risk scores from the CMS Hierarchical Condition Category (HCC) risk model. This model is used in practice to determine risk adjusted plan revenue payments in Medicare Advantage. These risk scores are calculated to estimate the expected total cost of medical (excluding pharmacy) care, using medical diagnosis codes from the cohort studied.

HOSPITAL LOCALITY ANALYSIS

For both the commercial and Medicare market analyses, we assigned an urban/suburban or rural designation to each outpatient drug claim. We used the five-digit zip code associated with each claim based on the location of where the service was provided to assign a Rural-Urban Commuting Area (RUCA)[19] code. We designate RUCA codes 1 to 6 as urban/suburban and codes 7 to 10 as rural. We excluded all claims with missing zip codes or those with unmatched zip codes to the RUCA code mapping.

[19] https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation

Caveats, limitations, and qualifications

The information was provided to PhRMA and is intended to help in understanding the differences in hospital outpatient department pharmacy spend between 340B participating and nonparticipating hospitals for commercially insured and Medicare patients. PhRMA may share this information with external parties with Milliman's prior written consent. We do not intend this information to benefit, and assume no duty or liability to, any third party that receives this work product. Any third-party recipient of this report that desires professional guidance should not rely upon Milliman's work product but should engage qualified professionals for advice appropriate to its specific needs. Any releases of this report to a third party should be in its entirety.

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in actuarial communications. Katie Holcomb, Jake Klaisner, and Philip Nelson are consulting actuaries for Milliman, Inc. They are members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial analysis contained herein.

Milliman has developed certain models to estimate the values included in this report. The intent of the models was to analyze outpatient drug utilization at different hospital types. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice (ASOP). The models rely on data and information as input to the models.

In preparing this analysis, we relied on the 2023 Consolidated Health Cost Guidelines Sources Databases (CHSD), CMS' Chronic Conditions Warehouse (CCW) Virtual Research Data Center (VRDC), and HRSA's 340B database. While we reviewed this data for reasonableness, we did not audit or independently verify any of the information furnished. To the extent that the data and information relied upon is not accurate, or is not complete, the values provided in this report may likewise be inaccurate or incomplete. In preparing our results, we also relied upon the methodology and study design in the GAO 2015 340B report. Our results will likely vary due to new information or proposed changes to the 340B program.

APPENDIX A

HOSPITALS INCLUDED IN THE STUDY

APPENDIX A.1
COMMERCIAL HOSPITALS INCLUDED IN STUDY[20]

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL[21]	OTHER NON-340B HOSPITAL
ALL HOSPITALS	1,143	1,165	580
MAJOR TEACHING HOSPITALS	290	100	27
OTHER TEACHING HOSPITALS	296	234	90
NON-TEACHING HOSPITALS	557	831	463

APPENDIX A.2
MEDICARE HOSPITALS INCLUDED IN STUDY

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITAL
ALL HOSPITALS	1,087	1,234	614
MAJOR TEACHING HOSPITALS	287	107	28
OTHER TEACHING HOSPITALS	272	264	98
NON-TEACHING HOSPITALS	528	863	488

APPENDIX A.3
COMMERCIAL HOSPITALS INCLUDED IN STUDY – URBAN / SUBURBAN & RURAL ANALYSIS[22]

	URBAN / SUBURBAN			RURAL		
CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITAL	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITAL
ALL HOSPITALS	1,074	1,108	542	85	94	60
MAJOR TEACHING HOSPITALS	290	97	27	0	3	0
OTHER TEACHING HOSPITALS	288	227	87	11	8	7
NON-TEACHING HOSPITALS	496	784	428	74	83	53

APPENDIX A.4
MEDICARE HOSPITALS INCLUDED IN STUDY – URBAN / SUBURBAN & RURAL ANALYSIS

	URBAN / SUBURBAN			RURAL		
CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITAL	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITAL
ALL HOSPITALS	1,068	1,215	597	306	255	115
MAJOR TEACHING HOSPITALS	285	106	28	67	20	3
OTHER TEACHING HOSPITALS	268	262	98	72	43	16
NON-TEACHING HOSPITALS	515	847	471	167	192	96

[20] The count of included hospitals varied between Medicare and commercial, as we limited to hospitals with claim data within each market after applying the limiting criteria described above.

[21] Non-340B DSH hospitals qualify as DSH by having a disproportionate share adjustment greater than 11.75% but are either disqualified from 340B eligibility due to being for-profit, failing to meet other eligibility requirements, or who elect not to participate in the 340B program.

[22] There are instances in the Commercial and Medicare claims data where a provider is assigned different zip codes on different claim lines and those different zip codes result in an urban/suburban designation on certain claims, and a rural designation on other claims. This results in an increase in the unique hospital count shown in A.3 and A.4, relative to A.1 and A.2, respectively.

APPENDIX B

OUTPATIENT SPENDING IN MEDICARE BY BENEFICIARTY RACE / ETHNICITY

APPENDIX B.1
AVERAGE 2022 OUTPATIENT DRUG SPEND PER MA PATIENT

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
ASIAN	$772	$167	$106
BLACK	$928	$201	$255
HISPANIC	$594	$154	$120
NORTH AMERICAN NATIVE	$782	$198	$306
WHITE	$774	$207	$229
OTHER	$790	$185	$160

APPENDIX B.2
AVERAGE 2022 OUTPATIENT DRUG SPEND PER FFS PATIENT

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
ASIAN	$841	$283	$418
BLACK	$1,002	$278	$467
HISPANIC	$835	$308	$374
NORTH AMERICAN NATIVE	$1,142	$339	$434
WHITE	$962	$370	$436
OTHER	$951	$370	$432

APPENDIX B.3
AVERAGE 2022 OUTPATIENT DRUG SPEND PER MA UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
ASIAN	$1,538	$339	$230
BLACK	$1,498	$314	$382
HISPANIC	$958	$258	$205
NORTH AMERICAN NATIVE	$1,142	$339	$434
WHITE	$1,305	$352	$379
OTHER	$1,465	$351	$304

APPENDIX B.4
AVERAGE 2022 OUTPATIENT DRUG SPEND PER FFS UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
ASIAN	$1,624	$523	$759
BLACK	$1,683	$449	$728
HISPANIC	$1,363	$477	$575
NORTH AMERICAN NATIVE	$1,595	$317	$621
WHITE	$1,655	$638	$714
OTHER	$1,765	$670	$740

APPENDIX C

OUTPATIENT SPENDING IN MEDICARE BY INCOME STATUS

APPENDIX C.1
AVERAGE 2022 OUTPATIENT DRUG SPEND PER MA PATIENT

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
NLI	$774	$195	$214
LI	$842	$220	$257

APPENDIX C.2
AVERAGE 2022 OUTPATIENT DRUG SPEND PER FFS PATIENT

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
NLI	$1,019	$391	$446
LI	$902	$334	$457

APPENDIX C.3
AVERAGE 2022 OUTPATIENT DRUG SPEND PER MA UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
NLI	$1,370	$350	$369
LI	$1,282	$322	$367

APPENDIX C.4
AVERAGE 2022 OUTPATIENT DRUG SPEND PER FFS UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
NLI	$1,777	$687	$737
LI	$1,458	$525	$698

APPENDIX D

OUTPATIENT SPENDING BY TEACHING HOSPITAL STATUS

APPENDIX D.1
AVERAGE 2023 OUTPATIENT DRUG SPEND PER PATIENT– COMMERCIAL MARKET

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
MAJOR TEACHING HOSPITALS	$796	$272	$429
OTHER TEACHING HOSPITALS	$575	$284	$235
NON-TEACHING HOSPITALS	$488	$176	$255

APPENDIX D.2
AVERAGE 2022 OUTPATIENT DRUG SPEND PER PATIENT– MEDICARE ADVANTAGE

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
MAJOR TEACHING HOSPITALS	$964	$269	$195
OTHER TEACHING HOSPITALS	$713	$237	$270
NON-TEACHING HOSPITALS	$654	$166	$215

APPENDIX D.3
AVERAGE 2022 OUTPATIENT DRUG SPEND PER PATIENT– MEDICARE FFS

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
MAJOR TEACHING HOSPITALS	$1,138	$425	$457
OTHER TEACHING HOSPITALS	$884	$414	$498
NON-TEACHING HOSPITALS	$799	$316	$416

APPENDIX E

OUTPATIENT SPENDING BY HOSPITAL LOCALITY

APPENDIX E.1
AVERAGE 2023 OUTPATIENT DRUG SPEND PER PATIENT– COMMERCIAL MARKET

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$654	$223	$269
RURAL	$456	$68	$186

APPENDIX E.2
AVERAGE 2023 OUTPATIENT DRUG SPEND PER UTILIZER– COMMERCIAL MARKET

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$1,698	$533	$628
RURAL	$1,093	$163	$476

APPENDIX E.3
AVERAGE 2022 OUTPATIENT DRUG SPEND PER PATIENT– MEDICARE ADVANTAGE

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$802	$205	$222
RURAL	$483	$107	$267

APPENDIX E.4
AVERAGE 2022 OUTPATIENT DRUG SPEND PER MA UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$1,350	$347	$368
RURAL	$755	$171	$437

APPENDIX E.5
AVERAGE 2022 OUTPATIENT DRUG SPEND PER PATIENT– MEDICARE FFS

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$969	$365	$442
RURAL	$663	$159	$345

APPENDIX E.6
AVERAGE 2022 OUTPATIENT DRUG SPEND PER FFS UTILIZER

CHARACTERISTIC	340B DSH HOSPITAL	NON-340B DSH HOSPITAL	OTHER NON-340B HOSPITALS
URBAN / SUBURBAN	$1,671	$629	$721
RURAL	$1,059	$270	$581

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milliman.com

CONTACT

Katie Holcomb
Katie.Holcomb@milliman.com

Jake Klaisner
Jake.Klaisner@milliman.com

Philip Nelson
Philip.Nelson@milliman.com

Ivanna Ulin
ivanna.ulin@milliman.com

Milliman