MILLIMAN WHITE PAPER

Analysis of 2020 Commercial Outpatient Drug Spend at 340B Participating Hospitals

September 2022

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Commissioned by Pharmaceutical Research and Manufacturers of America (PhRMA)

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Introduction

The 340B program, administered by the Health Resources and Services Administration (HRSA) within the U.S. Department of Health and Human Services (HHS), allows participating hospitals to obtain certain outpatient medications for reduced costs. These hospitals (referred to as 340B hospitals) are generally eligible for the program based on serving a disproportionate share of low-income Medicare and Medicaid patients and other specified criteria. Because providers keep the spread between reimbursement amount and the drug's acquisition cost, and lower acquisition costs produce greater spread, there may be financial incentives for 340B participating hospitals to favor more expensive medications, especially if the spread is a percentage of acquisition price. Under these circumstances, a hospital may also have incentives to treat more patients who use outpatient medications, which has been discussed elsewhere.[1, 2] While the reimbursement amount for Medicare beneficiaries is generally lower for drugs administered at 340B hospitals than non-340B (effective as of 2018), this dynamic does not exist for patients with commercial insurance coverage.

The U.S. Government Accountability Office (GAO) published a study in June 2015 comparing the per Medicare beneficiary hospital pharmacy outpatient drug spending at 340B hospitals to non-340B hospitals.[2] The findings of the GAO report showed a significantly higher per beneficiary pharmacy spend by Medicare at 340B hospitals, even when controlling for patient health status. In March 2018, Milliman published a white paper to investigate whether the same relationships exist in a commercially insured population, using 2015 data[3]. To do this, we used Milliman's proprietary commercial claims data set and applied a methodology similar to the 2015 GAO report. This paper is intended to update the results of the 2018 Milliman report using 2020 data.

Background

The 2015 GAO report evaluated per beneficiary drug spend for 340B and non-340B hospitals, for each hospital that served at least one beneficiary during the year. The study was performed on the Centers for Medicare and Medicaid Services (CMS) Medicare fee-for-service claims data set separately in 2008 and 2012 for hospitals whose 340B status remain unchanged in both time periods. The results of this study found the same conclusion in both 2008 and 2012:

"[P]er beneficiary Medicare Part B drug spending, including oncology drug spending, was substantially higher at 340B disproportionate share hospitals (DSH) than at non-340B hospitals. This indicates that, on average, beneficiaries at 340B DSH hospitals were either prescribed more drugs or more expensive drugs than beneficiaries at the other hospitals in GAO's analysis."

The GAO found that other factors did not appear to contribute to the cost difference observed between 340B and non-340B patients. The GAO accounted for factors including patient health status, hospital characteristics, patient population served, and oncology-specific spend, and confirmed that those factors did not appear to contribute to the higher costs at 340B hospitals.

The GAO study only analyzed claims for a Medicare population. We followed a methodology similar to the GAO to determine if the relationships found in the Medicare population also existed for patients with commercial health insurance.

For a variety of reasons, we could not completely replicate the GAO methodology. While Medicare has defined reimbursement structures that it uses for all hospitals, 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.

[1] Conti RM, Bach PB. Cost Consequences of the 340B Drug Discount Program. *JAMA.* 2013;309(19):1995–1996. doi:10.1001/jama.2013.4156. Retrieved August 17, 2022.

[2] U.S. Government Accountability Office (June 2015). MEDICARE PART B DRUGS: Action Needed to Reduce Financial Incentives to Prescribe 340B Drugs at Participating Hospitals. Publication No. GAO-15-442. Retrieved August 17, 2022, from https://www.gao.gov/assets/680/670676.pdf.

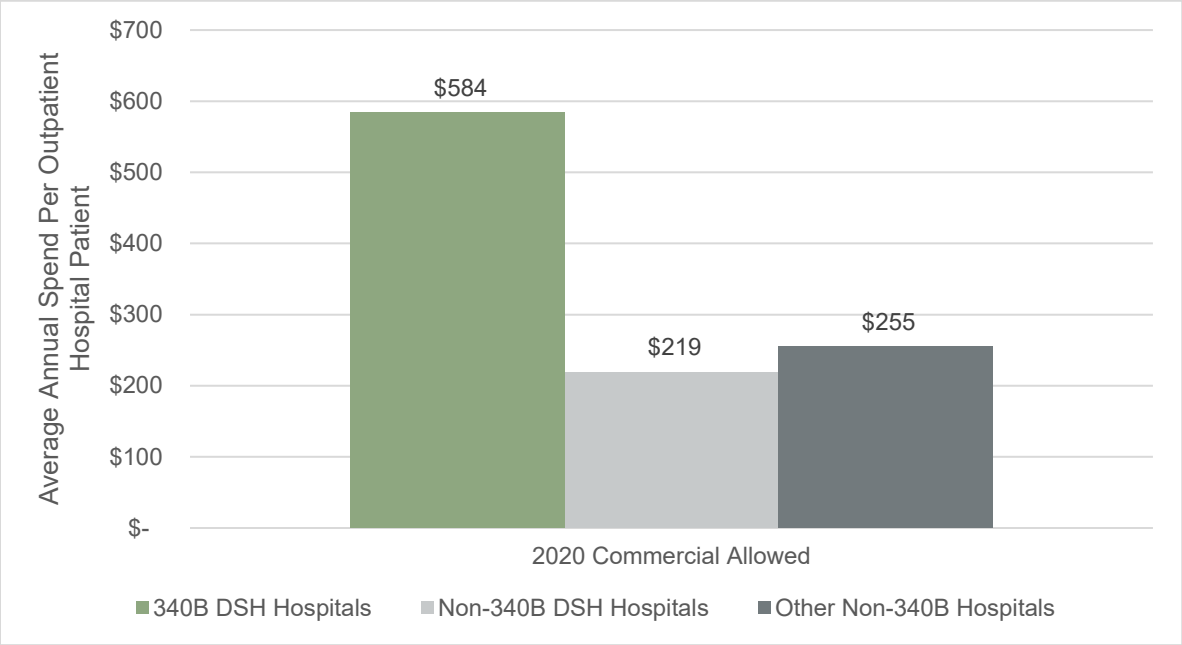
[3] Gomberg, J., Hunter, M., & Kim, C. (2018). Commercial Payers Spend More on Hospital Outpatient Drugs at 340B Participating Hospitals. www.milliman.com/en/insight/commercial-payers-spend-more-on-hospital-outpatient-drugs-at-340b-participating-hospitals

Results

Our study found that per patient pharmacy spend on hospital outpatient medications at 340B hospitals is higher than at non-340B hospitals. Figure 1a compares the per patient outpatient pharmacy costs at 340B DSH hospitals versus non-340B hospitals on a per outpatient hospital patient per year basis (e.g., $219 is the average annual amount spent on outpatient drugs per unique patient who receives outpatient services from the hospital). Due to the differences in contracted payment arrangements among commercial payers, results were repriced to a Medicare fee schedule and then converted back to a commercial allowed amount using a Medicare-to-commercial conversion factor. For more information on Medicare repricing, please see "Medicare repricing" in the Methodology and Assumptions section below.

Figure 1a shows average spend on outpatient drugs per outpatient hospital patient. As shown in Figure 1a, per patient pharmacy spend at 340B DSH hospitals is $584 compared to $219 and $255 for non-340B DSH and other non-340B hospitals, respectively. Figure 1a displays results for non-340B hospitals separately for DSH and non-DSH to account for a hospital's DSH percentage contributing to the spend differences. Health status was analyzed through risk score comparisons and does not appear to explain the difference in 340B spend because patients at both 340B and non-340B hospitals had similar risk scores (3% higher for 340B DSH patients than for non-340B DSH patients). The results below are not risk adjusted, as discussed further in the next section, though the ratios would be similar if adjusting for risk scores.

FIGURE 1A: AVERAGE SPEND ON OUTPATIENT DRUGS PER OUTPATIENT HOSPITAL PATIENT



The costs in Figure 1a are expressed across all patients who receive outpatient services from the hospital, consistent with the GAO methodology. To the extent 340B DSH hospitals may see more patients require medications as part of their treatment, we also analyzed the costs across drug utilizers only. This helps normalize for differences in the number of drug utilizers and instead focuses just on the dollars spent on outpatient drugs for each patient using drugs. Figure 1b compares the per patient outpatient pharmacy costs at 340B DSH hospitals versus non-340B hospitals on a per outpatient hospital drug utilizer per year basis (e.g., $781 is the average annual amount spent on outpatient drugs per unique outpatient drug utilizer).

FIGURE 1B: AVERAGE SPEND ON OUTPATIENT DRUGS PER DRUG UTILIZER

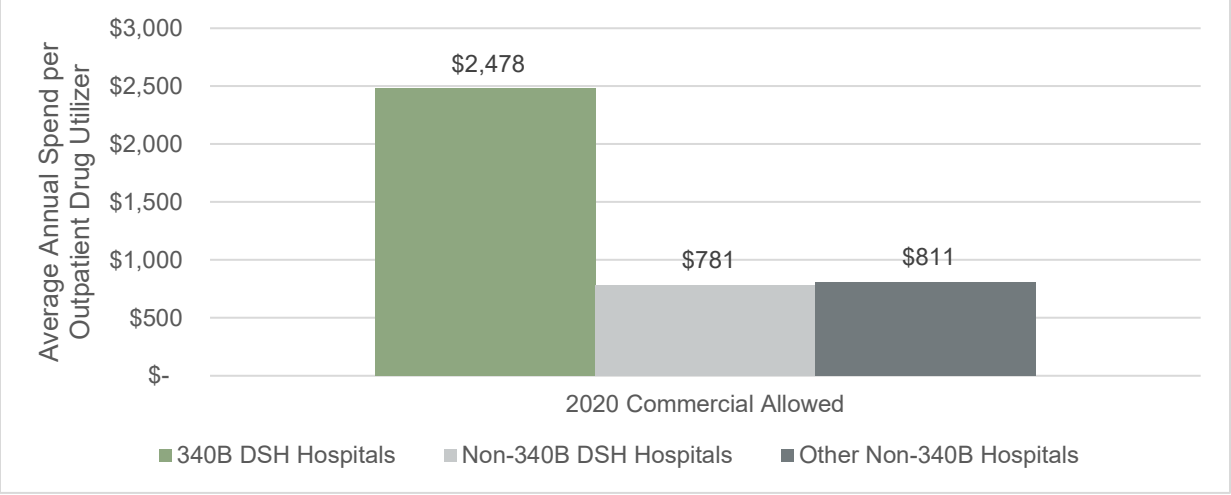
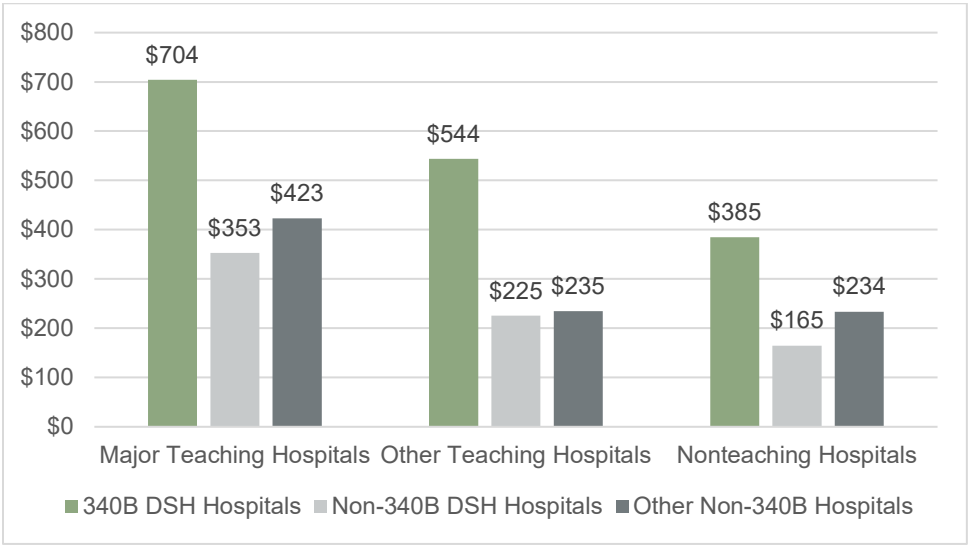


Figure 1b shows a similar relationship as Figure 1a, though the differential between the results for 340B DSH hospitals compared to non-340B hospitals is larger, with 340B per drug utilizer spend about three times greater than non-340B. When looking at just drug utilizers, we also observed wider differences in health status in our data, though not enough to account for the cost difference seen in Figure 1b (risk scores for 340B DSH drug utilizers were about 17% greater than for non-340B DSH drug utilizers).

We also evaluated whether a hospital's status as a teaching institution makes a difference in average per patient spend between 340B and non-340B status. Figure 2 summarizes the results of this analysis and shows that outpatient pharmacy spend on a per patient basis is consistently higher at 340B hospitals. Although the major teaching hospitals appear to have higher average per-patient spend regardless of 340B status, teaching institution status does not explain the difference in outpatient pharmacy spending between 340B DSH hospitals and non-340B hospitals.

FIGURE 2: AVERAGE PER PATIENT SPEND ON OUTPATIENT DRUGS BY TEACHING STATUS



Discussion

Our study was performed on a one-year time basis using 2020 data. The original commercial study, published in March 2018, used 2015 data. In the original study, the ratio of per patient spend at 340B over non-340B DSH hospitals was 2.88. In the current study, the ratio is 2.67. The relationship between per patient pharmacy spend at 340B DSH hospitals versus non-340B hospitals is similar in the two studies, suggesting the pattern has remained consistent over time. We note 2020 claims data were inherently impacted by the COVID-19 pandemic. As such, we examined the ratio of 340B over non-340B spend in January through February 2020 (pre-COVID-19), as compared to the ratio in March through December 2020 (post-COVID-19) and observed the ratios were similar (the pre-COVID-19 ratio was about 2.5).

There are several factors to consider when comparing spend between 340B and non-340B hospitals. We considered the following factors to help explain cost differences between these two hospital types. Of the considerations listed here, we found drug mix to be a major driver of differences in spending, while the other items had lesser impact.

- **Drug mix and pharmacy utilization**

  The difference in pharmacy spending at 340B and non-340B hospitals can be driven by differences in drug mix, drug utilization or a combination of both. We compared the drug mix and utilization between 340B and non-340B hospitals and concluded that a mix of drugs with higher average allowed claim costs is the primary driver of the higher pharmacy spend at 340B DSH hospitals compared to non-340B DSH hospitals. The utilization of drugs is relatively similar at both 340B and non-340B hospitals, with drug utilizers at 340B hospitals using about 10% more scripts per patient, but the average allowed cost of those scripts was more than 150% greater than the cost per script among non-340B hospital drug utilizers.

- **Risk scores**

  Risk scores are commonly used as a metric to measure the overall health of a population, with a higher risk score generally considered to be a sicker population. Risk scores are calculated based upon the total cost of care and, as such, it may not be appropriate to apply a risk score adjustment to the pharmacy-only portion of a patient's total health spend. For this reason, we presented results without a risk adjustment methodology applied. However, total cost of care risk scores indicate overall morbidity, which could be linked to expected pharmacy costs for a patient. We reviewed the risk scores for each patient group in Figures 1a and 1b, and found that risk-adjusted results would produce a similar difference in spend between 340B and non-340B facilities.

- **Medicare repricing**

  An important difference between performing this analysis on a population with health insurance coverage through Medicare and on a population with commercial health insurance is the difference in pharmacy reimbursement. In Medicare, physician-administered medications are reimbursed at a set rate equal to an average sales price (ASP) plus methodology. In the commercial health insurance market, the range and types of negotiated payments vary significantly. To normalize for variation in reimbursement across the commercial market, we repriced all pharmacy claims to Medicare and then converted the Medicare amounts to a commercial equivalent using a conversion factor of 2.11. The commercial conversion factor was calculated as the total commercial outpatient drug spend over the total Medicare repriced outpatient drug spend, regardless of 340B status.

Other Considerations and Limitations

Factors that we did not capture in our analysis may contribute to the observed differences in costs between 340B and non-340B hospitals, as described below. In addition, our method of using inferred commercial allowed amounts on a national average basis could misrepresent actual commercial reimbursement at any particular hospital. Statistical testing, which we did not perform, could provide insight into the variability of various assumptions.

In its 2015 report, the GAO considered how site of service could influence the results. The GAO noted its study only looked at hospital outpatient pharmacy claims and recognized some patients may receive a portion, or all, of their physician-administered medications through a physician's office. The GAO found that the percentage of patients receiving all their medications through a hospital outpatient setting did not materially differ between 340B and non-340B hospitals. We did not specifically review this as part of our analysis and feel comfortable that the GAO's findings would be similar in a commercially insured population. However, it is possible there are differences between the commercial and Medicare market due to reimbursement differences driven by site of service in the commercial

market that do not exist in Medicare. Additionally, we did not attempt to evaluate retail pharmacy outpatient claims at contract pharmacies for 340B hospitals. These claims would primarily be for self-administered medications and not generally reimbursed through the medical benefit (the focus of this study).

Our analysis did not evaluate patient outcomes. The additional medications patients receive at 340B hospitals could lead to better outcomes. The GAO addressed this in its report and stated this factor did not account for the complete difference in spend. Additionally, a recent study published in the *New England Journal of Medicine* found that 340B-eligible hospital status did not show clear evidence of expanded care for or lower mortality among low-income patients.[4]

Unlike the GAO's study on the Medicare population, we did not have the ability to use 100% of the commercial outpatient facility drug claims due to the proprietary nature of commercial paid claims datasets. We reviewed the provider identifiable sample for reasonableness and did not find any biases as compared to our larger data sets.

Lastly, we did not study how 340B discounts are passed on to the patients and / or payers. It is possible these discounts are indirectly passed through to patients by the hospital offering additional services and through discounted contracting terms with payers.

Methodology and Assumptions

DATA SOURCES

We used Milliman's 2020 Consolidated Health Cost Guidelines™ (CHSD) database and the Health Resources and Services Administration (HRSA) 340B database. The CHSD data set contains over 58 million lives from commercial lines of business and is a consolidation of member experience data contributed by numerous health plans throughout the nation. When limiting the data to the hospitals and members receiving outpatient hospital services studied in this report, there are approximately 13 million lives. See Appendix A for total hospitals and patients included in the study. Prior to using the data, we validated it for consistency and overall reasonability. We reviewed the top Healthcare Common Procedure Coding System (HCPCS) codes by spend for reasonability.

INCLUDED DATA

To be included in the study, a hospital had to treat at least one patient in the hospital outpatient setting during the 2020 calendar year. We limited our data to hospital outpatient department claims from hospitals providing acute care. As such, we excluded the following providers:

1. Any hospital not providing acute care
2. Hospitals outside of the 50 states and Washington, D.C.
3. Prospective Payment System (PPS)-exempt hospitals
4. Freestanding cancer centers
5. Sole community hospitals
6. Children's hospitals
7. Rural referral centers
8. Critical access hospitals

In addition, we omitted costs associated with medication administration, as well as any other costs bundled with the outpatient pharmacy claim.

IDENTIFYING HOSPITAL TYPES

We used a combination of Medicare IDs and National Provider Identifier (NPI) to identify 340B participating and nonparticipating hospitals. We used the list provided at the Health Resources and Services Administration (HRSA) website to identify hospitals participating in the 340B program. We required hospitals to participate in the 340B program in both calendar years 2016 and 2020 to mirror the methodology used by the GAO analysis. For hospitals that change status within a calendar year, we used the hospital's status at the beginning of the year. We identified DSH and non-DSH hospitals using the DSH public use file (PUF) reports from CMS.

We determined which facilities were teaching hospitals based on definitions from CMS[5]. A major teaching hospital is defined as a hospital that is a member of the Council of Teaching Hospitals (COTH). Other teaching hospitals include

[4] Desai, S. & McWilliams, M. (February 8, 2018). Consequences of the 340B Drug Pricing Program. *New England Journal of Medicine*;378(6):539–48. Retrieved March 2, 2018, from http://www.nejm.org/doi/full/10.1056/NEJMsa1706475.

[5] https://data.cms.gov/provider-characteristics/hospitals-and-other-facilities/provider-of-services-file-hospital-non-hospital-facilities

"limited" teaching hospitals (hospitals that are not a member of COTH but have at least one intern and resident) and graduate teaching hospitals. See Appendix B for a detailed count of hospital types included in our study.

IDENTIFYING HOSPITAL OUTPATIENT DEPARTMENT 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

We repriced all claims to Medicare-allowed amounts and then converted back to a commercial-allowed amount using a conversion factor. This factor was calculated as the total commercial outpatient drug spend over the total Medicare repriced outpatient drug spend. We did not apply any geographic area adjustments to the repriced Medicare allowed amounts. All claims were repriced to a Medicare basis to normalize for any variation that may exist in commercial contracted reimbursement rates.

To calculate the Medicare-allowed amount for bundled claims, we unbundled these services and assigned a Medicare amount based on the distribution of commercial-allowed charges for services within the bundled claim.

RISK SCORE ANALYSIS

To normalize for morbidity and demographic differences, we evaluated the risk score differences among the population of individuals treated at each hospital type. We used Milliman Advanced Risk Adjusters™ (MARA™) to compute each member's risk scores. This is Milliman's proprietary internal risk model, which differs from the Medicare Hierarchical Condition Category (HCC) risk score that was used in the GAO report. We used concurrent risk scores computed based on the member's medical diagnoses. The risk score computation accounts for expected total cost of care based on medical diagnosis codes for the 2020 cohort studies.

Caveats and Qualifications

Guidelines issued by the American Academy of Actuaries require actuaries to include their professional qualifications in actuarial communications. I, Katie Holcomb, am a consulting actuary for Milliman, Inc. I am a member of the American Academy of Actuaries, and I meet the qualification standards of the American Academy of Actuaries to render the actuarial analysis contained herein.

In analyzing the data set to develop claim cost, we used the 2020 Consolidated Health Cost Guidelines Sources Database, Milliman Health Cost Guidelines, and the HRSA 340B database. We did not audit or independently verify any of the information furnished, except that we did review the data for reasonableness and consistency. To the extent that any of the data or other information relied on was incorrect or inaccurate, the results of our analysis could be materially affected.

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 2020 Consolidated *Health Cost Guidelines* Sources Databases (CHSD) and HRSA 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.

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 patients. This work is not intended to be used for other purposes or to benefit any other party. PhRMA may share this information with outside entities with Milliman's permission. Milliman does not intend to benefit, and assumes no duty or liability to, other parties who receive this work product. Any third party recipient of this work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs. Any releases of this report to a third party should be in its entirety. Milliman does not endorse any public policy or advocacy position on matters discussed in this report.

The terms of Milliman's Master Services Agreement with PhRMA effective January 19, 2016 and extended effective October 26, 2021, apply to this report and its use.

APPENDIX A

DATA INCLUDED IN STUDY

	HOSPITAL COUNT	PATIENT COUNT
TOTAL ACUTE HOSPITALS IDENTIFIED	2,995	NA
TOTAL CHSD COMMERCIAL POPULATION (QUALITY FILTER APPLIED)	2,947	43,191,718
CHSD OUTPATIENT ONLY	2,941	20,356,195
STUDIED POPULATION IN FIGURE 1A	2,674	13,471,836
STUDIED UTILIZERS IN FIGURE 1B	2,567	3,960,907

APPENDIX B

HOSPITALS INCLUDED IN STUDY

CHARACTERISTIC	340B DSH HOSPITALS	NON-340B DSH HOSPITALS	OTHER NON-340B HOSPITALS
ALL HOSPITALS	835	1,306	533
MAJOR TEACHING HOSPITALS	221	126	38
OTHER TEACHING HOSPITALS	209	265	82
NONTEACHING HOSPITALS	405	915	413

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