



# For-Profit Pharmacy Participation in the 340B Program

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## PREPARED BY:

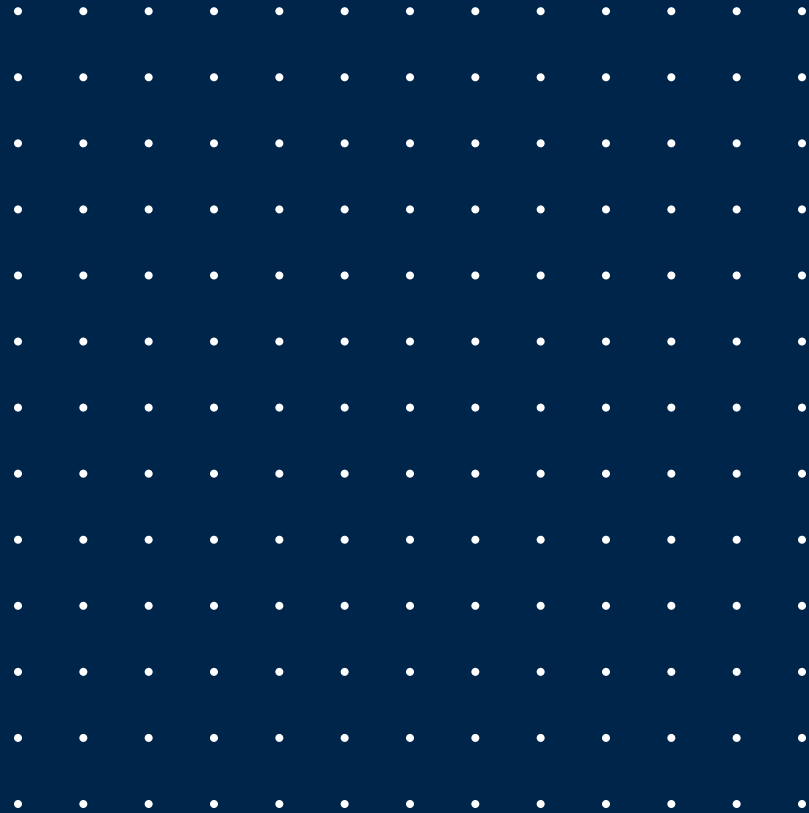
**Aaron Vandervelde**  
avandervelde@thinkbrg.com  
202.480.2661

**Kevin Erb**  
kerb@thinkbrg.com  
202.480.2742

**Lauren Hurley**  
lauren.hurley@thinkbrg.com  
202.839.3922

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## Executive Summary

*In March 2010, the Health Resources and Services Administration (HRSA) expanded guidance allowing 340B covered entities to establish contract pharmacy arrangements with an unlimited number of pharmacies.<sup>1</sup>*

What started as a well-intentioned effort to provide safety-net providers free or discounted drugs to treat uninsured and vulnerable patients appears to have evolved into a profit-centric corporate initiative that has fundamentally altered the 340B program. Today, half of the twenty largest for-profit corporations in the United States—including Walgreens, Cigna, CVS Health, and Walmart—are active participants in the 340B program through contract pharmacy arrangements.<sup>2</sup> Using vertically integrated supply chains consisting of pharmacies, pharmaceutical benefit managers (PBMs), and health plans, these corporations can leverage their market power to drive growth in the 340B program and capture profits related to 340B sales.

In light of this evolution in the 340B program, BRG professionals conducted this analysis to better understand historical trends in 340B contract pharmacy arrangements, the increased participation of for-profit corporations in the 340B program, average profit margins on 340B purchased medicines dispensed through contract pharmacies, and the potential impact of growth in 340B contract pharmacy participation. Key findings include:

1. Following HRSA's expansion of the contract pharmacy program in March 2010, contract pharmacy participation grew 4,228 percent between April 2010 and April 2020.
2. While over 27,000 distinct pharmacies participate in the 340B program today, we estimate over half of the 340B profits retained by contract pharmacies are concentrated in just three pharmacy chains (Walgreens, Walmart, CVS Health) and Cigna's Accredo specialty pharmacy.
3. The average profit margin on 340B medicines commonly dispensed through contract pharmacies is an estimated 72 percent, compared with just 22 percent for non-340B medicines dispensed through independent pharmacies.
4. 340B covered entities and their contract pharmacies generated an estimated \$13 billion in gross profits on 340B purchased medicines in 2018, which represents over 25 percent of the total gross profits on brand medicines realized by all providers that dispense or administer medicines.

<sup>1</sup> Federal Register, "Notice Regarding 340B Drug Pricing Program—Contract Pharmacy Services," Vol. 75, No. 43 (March 5, 2010), available at: <https://www.govinfo.gov/content/pkg/FR-2010-03-05/pdf/2010-4755.pdf>

<sup>2</sup> Based on BRG analysis of the 340B contract pharmacy database.



## History of 340B Contract Pharmacies

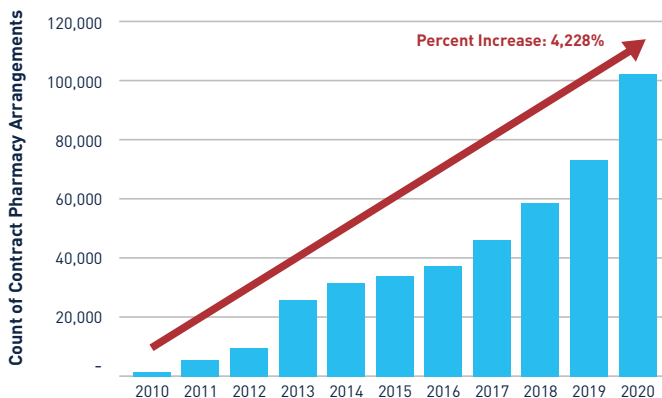
Congress created the 340B program in 1992 to provide recipients of HRSA grants (known as “grantees”) and safety-net hospitals access to the voluntary discounts pharmaceutical manufacturers had provided before the enactment of the Medicaid rebate statute. These voluntary discounts had declined due to the Best Price provision in the Medicaid rebate statute for these covered entities. To assist the covered entities, Congress made qualifying hospitals and safety-net clinics eligible for steep discounts on medicines under the 340B program.

340B contract pharmacies were first permitted through guidance issued by HRSA in 1996.<sup>3</sup> At the time, grantees (e.g., community health centers, Ryan White clinics, black lung clinics) that did not have a pharmacy license were unable to dispense 340B purchased medicines to the indigent populations they served on site. Through the 1996 guidance, HRSA enabled any 340B covered entity that did not operate its own pharmacy to contract with a single third-party pharmacy to dispense 340B purchased medicines to eligible patients on its behalf. These are referred to as contract pharmacy arrangements and were predominantly established with independently owned community pharmacies located near the 340B covered entity. In 2000, 98 percent of all contract pharmacy arrangements were with independent pharmacies, and 80 percent of these pharmacies were within ten miles of the 340B covered entity. Of the forty-nine total contract pharmacy arrangements, 98 percent were established by grantees as opposed to safety net hospitals.<sup>4</sup>

In 2001, in response to requests by 340B covered entities to expand the 340B contract pharmacy program, HRSA initiated a demonstration project that allowed a small number of 340B covered entities to contract with multiple third-party pharmacies. This demonstration project enabled 340B covered entities that served patients in a geographically broad area to provide 340B purchased medicines in the communities where their patients lived.<sup>5</sup> The profile of these multiple contract pharmacy networks looked different from the original program in that there was greater participation by national pharmacy chains (54 percent overall) and less than half of the contract pharmacies were within ten miles of the 340B covered entity.<sup>6</sup>

Figure 1

### Contract Pharmacy Arrangements April 1, 2010 - April 1, 2020



*“The average gross margin on 340B purchased medicines dispensed through contract pharmacies is an estimated 72%...*

*For some products, 340B contract pharmacies dispense a medicine that was purchased by the 340B covered entity for a penny, but still receive full reimbursement for the medicine from private insurance and Medicare Part D plans.”*

In March 2010, HRSA issued additional guidance allowing all 340B covered entities, even those with their own outpatient pharmacies, to contract with an unlimited number of third-party pharmacies. This guidance fundamentally opened the doors for all covered entities to generate additional profits on 340B purchased drugs. Subsequently, for-profit pharmacies rushed to capitalize on the outsized profit margins available on 340B purchased medicines. Between April 1, 2010, and April 1, 2020, the number of contract pharmacy arrangements increased from 2,321 to 100,451—a 4,228 percent increase (see Figure 1).

Today, more than 27,000 individual pharmacies (almost one out of every three pharmacies) participate in the 340B program as contract pharmacies, including virtually all the major national and regional chains, such as Walgreens, Walmart, CVS, Rite-Aid, Kroger, Albertsons, Costco, and many more. Hospitals enrolled in the 340B program contract on average with twenty-two distinct pharmacies, and the largest contract pharmacy networks include over 250 pharmacies, some of which are thousands of miles away from the 340B covered entity (see Case Study 1). Hospitals now account for over 44 percent of all contract pharmacy arrangements, up from 2 percent in 2000.

The enormous growth in 340B contract pharmacy arrangements seems to boil down to a single factor: outsized profit margins. The National Community Pharmacists Association (NCPA) issues an annual report on independent pharmacy financials. Between 2013 and 2018, NCPA reported that the average gross margin on all prescription medicines ranged between 22 percent and 23 percent. As we will discuss in more detail later in this report, the average gross margin on 340B purchased medicines dispensed through contract pharmacies is an estimated 72 percent. For some products, 340B contract pharmacies dispense a medicine that was purchased by the 340B covered entity for a penny but still receive full reimbursement for the medicine from private insurance and Medicare Part D plans. That reimbursement can exceed \$1,000 for many specialty medicines. The profit potential inherent in the 340B program appears to have attracted the largest for-profit corporations in the world and altered the hierarchy of 340B program stakeholders.

3 Federal Register, Vol. 61, No. 165 / Friday, August 23, 1996 / Notices [August 23, 1996], available at: <https://www.govinfo.gov/content/pkg/FR-1996-08-23/pdf/96-21485.pdf>

4 Based on BRG analysis of 340B covered entity and contract pharmacy data published by HRSA.

5 Federal Register, “Notice Regarding 340B Drug Pricing Program-Contract Pharmacy Services,” notice by HRSA [January 12, 2007], accessed at: <https://www.federalregister.gov/documents/2007/01/12/E7-334/notice-regarding-340b-drug-pricing-program-contract-pharmacy-services>

6 Based on BRG analysis of the 340B covered entity and contract pharmacy data published by HRSA.

# Evolution of For-Profit Pharmacy Participation

The 340B program was originally created for non-profit healthcare providers viewed as the backbone of the “safety net” of the US healthcare system.<sup>7</sup> The first participants in the 340B program included not-for-profit hospitals that served large indigent populations and small healthcare clinics that relied on federal grants, because many of their patients were uninsured and could not afford basic healthcare services. Between 2004 and 2010, the 340B program grew substantially driven primarily by new enrollments of disproportionate share hospitals. By 2010, 16 percent of covered entities had established contract pharmacy arrangements, and over 85 percent of those contract pharmacy arrangements were with independent community pharmacies.

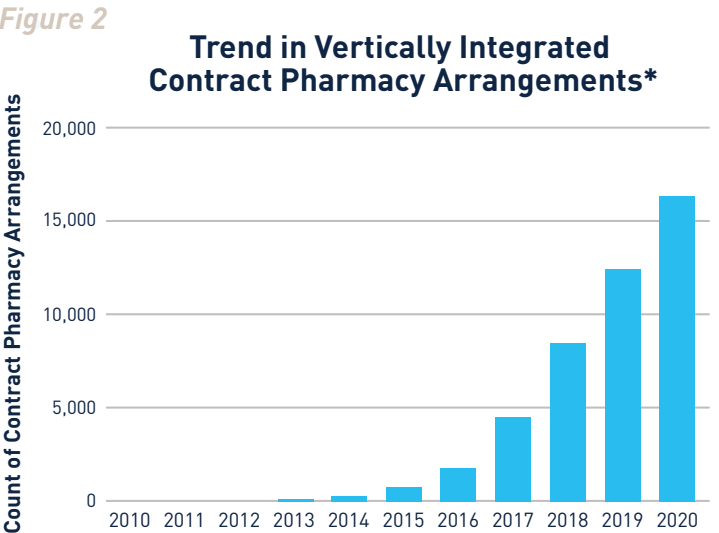
That changed following the March 2010 expansion of the contract pharmacy program and the lack of oversight over how for-profit entities can benefit from the 340B program. The 2010 guidance created an opportunity for sophisticated, for-profit pharmacy chains to realize larger margins than they otherwise could. Between 2010 and 2015, large national and regional pharmacy chains established tens of thousands of contract pharmacy arrangements. By 2015, these chain pharmacies represented over 66 percent of all contract pharmacy arrangements, up from just 15 percent at the beginning of 2010. Instead of maintaining close relationships with covered entities, as had been the practice for independent pharmacies before 2010, large national and regional chains turned to sophisticated software algorithms to identify 340B prescriptions and maximize the revenue generated from these discounted fills.

Starting in 2016, a new pattern of vertically integrated specialty pharmacy enrollments emerged. Specialty pharmacies dispense expensive medications that may require special handling or patient support services. Operations for these pharmacies are typically concentrated in a small number of locations distributed throughout the US, and medicines are shipped directly to patients.

Over the past two decades, PBMs, the organizations that establish pharmacy reimbursement rates, make formulary decisions, and set cost-sharing amounts, have built large national specialty pharmacies that primarily serve the beneficiaries of the PBM that owns the specialty pharmacy. In January 2016, there were 1,473 contract pharmacy arrangements between 340B covered entities and these vertically integrated specialty pharmacies. By April 2020, this count had grown to 16,293—a 1,006 percent increase in four years (see Figure 2).

The evolution in for-profit pharmacy participation in the 340B program encompasses both the types of pharmacies participating and the structure of the contracts themselves. Based on our primary research, we understand that most contract pharmacy arrangements established prior to 2010 provided for an enhanced dispensing fee paid to the contract pharmacy. This contracting structure reflected the more complex service the contract pharmacy provided (i.e., dispensing a 340B purchased medicine to a 340B patient, managing 340B eligibility, and potentially maintaining separate inventories) and the increased compensation for that service. Any profit associated with the reimbursement of the medicine (less the enhanced dispensing fee) went to the 340B covered entity as the primary stakeholder in the 340B program.

A 2018 Government Accountability Office (GAO) report based on data collected between 2014 and 2016 found that the types of contracting arrangements had evolved to include pharmacies retaining a percentage of 340B profits or overall reimbursement.<sup>8</sup> This shift toward 340B profit sharing by contract pharmacies suggests that for-profit pharmacies are also a primary stakeholder in the 340B program, despite this never having been conceived of nor explicitly included in the program by Congress when it passed the 340B statute. Current guidance makes no recommendations on how profit-sharing agreements between covered entities and contract pharmacies should be structured. As a result, covered entities freely negotiate the terms of agreements with contract pharmacies. Although large, sophisticated academic medical centers may have enough leverage to negotiate favorable terms with an organization wielding the combined market power of a national pharmacy, PBM, and health plan, small grantees carry little leverage when negotiating with these entities.<sup>9</sup>



\*Excludes certain Walgreens mail order pharmacies that disenrolled en masse in 2015/2016

## 340B Profit Margins for Retail and Specialty Medicines

Outsized profit margins on 340B purchased medicines dispensed through a retail or specialty pharmacy has attracted for-profit national pharmacies that are vertically integrated with PBMs and health plans. For nearly all contract pharmacy arrangements, the determination of whether a medicine is eligible for a 340B discount is made after the medicine is dispensed to and paid for by the patient and his or her health plan. For brand medicines, this reimbursement amount is roughly equivalent to the list price or wholesale acquisition cost (WAC) of the medicine. To determine the profit margin on a 340B purchased medicine dispensed through a 340B contract pharmacy, we must also estimate the 340B discounted price of the medicine.

7 HRSA, Sec. 340B Public Health Service Act, available at: <https://www.hrsa.gov/sites/default/files/opa/programrequirements/phsactsection340b.pdf>  
8 Government Accountability Office, *Federal Oversight of Compliance at 340B Contract Pharmacies Needs Improvement* (June 2018).  
9 *Cares Community Health v. Department of Health and Human Services*, No. 18-5319, slip. op. at 10 (D.C. Cir. Dec. 20, 2019).

The 340B price is calculated using a statutory formula derived from two pricing metrics incorporated in the Medicaid Drug Rebate Program. At a high level, these pricing metrics for brand medicines are:

**Basic Medicaid Rebate:** Equal to the greater of 1) 23.1 percent of average manufacturer's price (AMP) or 2) the largest discount available in the commercial market (referred to as "Best Price").

**Consumer Price Index (CPI) Penalty:** A price inflation penalty that grows as increases in AMP for a medicine exceed the rate of inflation.

Using these two primary components, the 340B price is equal to AMP less the Basic Medicaid rebate less the price inflation penalty (see Figure 3). Depending on the competitive dynamics that exist in any therapeutic category, the 340B price could fall below \$0.00. In these instances, the price is reset to \$0.01 and is referred to as "penny pricing."

**Table 1: 340B Price Calculation Examples**

	Pricing Component	Formula	Diabetes Example	Oncology Example
[A]	AMP		\$500.00	\$1,000.00
[B]	Medicaid Rebate	Greater of [C] or [D]	250.00	231.00
[C]	Base Rebate	[A] * 23.1%	115.00	231.00
[D]	Best Price	Largest Discount	250.00	100.00
[E]	CPI Penalty	Price Increase Above CPI	225.00	200.00
[F]	340B Discounted Price	[A] - [B] - [E]	\$25.00	\$569.00

As discussed further in Appendix A, we developed a methodology for estimating the 340B price using publicly available data and applied this methodology to the eighty-six largest retail and specialty brand medicines that are commonly dispensed through a 340B contract pharmacy based on 2018 sales volume. Our methodology incorporates both concepts discussed above. Where public statements on 340B pricing are available, we have compared our results against actual 340B prices. Based on these comparisons and the structural design of our methodology, we believe that our 340B price estimates, and therefore the 340B profit margins these prices are used to calculate, are conservative.

When comparing our 340B price estimate to the WAC price for the same medicine, our analysis found the average 340B discount from WAC across the eighty-six retail and specialty brand medicines examined was 72 percent in 2018. By comparison, most non-340B pharmacies typically purchase a brand medicine at a 2 percent to 3 percent discount off of WAC.<sup>10</sup> For certain therapeutic categories with steep commercial discounts attributable to competition in the category, the average 340B discount exceeded 80 percent (see Figure 4). Twenty-seven of the medicines in our analysis had an average discount in 2018 of at least 90 percent, and we identified six medicines with a 340B price equal to \$0.01.

**Table 2: Average 340B Discounts by Therapeutic Class**

Average 340B Discounts by Therapeutic Class						
Therapeutic Class*	Avg. Discount	# Medicines in Class	Medicines with a Discount of at Least:			
			72%	80%	90%	95%
Anti-infective agent	44%	11				
Antineoplastic agent	50%	8	1			
Blood modifier agent	58%	4				
Cardiovascular agent	71%	3	1	1		
Central nervous system agent	58%	13	2			
Anti-diabetes agent	90%	23	18	17	10	10
Gastrointestinal agent	90%	7	6	5	2	1
Immunological agent	47%	4				
Respiratory agent	67%	11	5	3		
<b>Top 86 Products</b>	<b>72%</b>	<b>86</b>	<b>35</b>	<b>27</b>	<b>12</b>	<b>11</b>

\*Excludes Therapeutic Classes with one product

10 Based on BRG analysis of National Average Drug Acquisition Cost (NADAC) data.

# FAST FACTS: Contract Pharmacy Growth

General Statistics	Hospitals		Grantees	
	2010	2020	2010	2020
Total Contract Pharmacy Arrangements	193	43,217	2,128	58,252
% of Total Contract Pharmacy Arrangements	8%	43%	92%	57%
Average Contract Pharmacies per Entity	1	22	1	11
Average Distance b/w Contract Pharmacy & Entity (miles)	34	334	36	198
<b>Penetration Rate</b>				
Count of Entities w/ Contract Pharmacies	116	1,999	1,803	5,195
% of Entities w/ Contract Pharmacies	13%	78%	16%	27%

Because reimbursement by Medicaid, commercial, and Medicare Part D insurance plans is approximately equal to WAC for brand medicines, 340B covered entities and their contract pharmacies realized an average 72 percent profit margin on 340B purchased brand medicines. This margin is more than three times greater than the average margin realized by independent pharmacies and contributes to the rapid growth of 340B contract pharmacy arrangements. We estimate that 340B covered entities and their contract pharmacies generated over \$13 billion in profits from 340B purchased medicines in 2018, which represents over 25 percent of the total \$48 billion in profits realized by all providers that dispensed or administered brand medicines in 2018.<sup>11</sup> These profits are highly concentrated in 340B hospitals and the pharmacies they contract with, which account for almost 90 percent of all 340B purchases.<sup>12</sup>

There is little information on how profits are shared between 340B covered entities and their contract pharmacies. A 2018 GAO report<sup>13</sup> found a variety of contracting designs, but the underlying data was collected between 2014 and 2016, and 340B contract pharmacy arrangements have evolved rapidly since then. Although we don't know what share of the \$13 billion in profits generated through 340B contract pharmacies are retained by for-profit pharmacies, we can estimate their relative shares of profits. To do this, we considered the total number of contract pharmacy arrangements by chain, the type of pharmacy (retail versus specialty), and the size of the 340B covered entity contracted with each pharmacy. Our analysis found that more than half of all profits realized by the 27,000 340B contract pharmacies participating in the 340B program today are concentrated in just four companies: Walgreens, CVS, Walmart, and Cigna's Accredo specialty pharmacy.

*More than half of all profits realized by 340B contract pharmacies are concentrated in just four companies.*

## Implications of For-Profit Pharmacy Participation in the 340B Program

As the prevalence of contract pharmacy arrangements has grown and the contracting design between 340B covered entities and contract pharmacies has evolved, the implications of these arrangements are becoming clear. First, profits on 340B purchased medicines are now distributed across a vertically integrated supply chain that includes not just the covered entities but also pharmacies, contract pharmacy administrators, PBMs, health plans, and employer groups. The 340B program was originally intended to provide healthcare services to indigent populations but income from the program is now being captured by some of the largest corporations in the world.

Second, 340B covered entities are often in competition with the very pharmacies with which they contract. This occurs because the vertically integrated healthcare companies implement cost-sharing models that create incentives for 340B patients to fill their prescriptions in the contract pharmacy instead of the 340B covered entity's own pharmacy. Given the choice between a \$35 copayment at the preferred contract pharmacy or a \$250 coinsurance payment at the 340B covered entity's own hospital outpatient pharmacy, most patients will fill their prescriptions at the contract pharmacy. Based on our work with 340B purchase data, we estimate that almost two-thirds of all retail and specialty drugs purchased at a 340B price are dispensed by contract pharmacies. Separately, the covered entity also enters into contracts with the vertically integrated PBM, which establishes reimbursement rates for the pharmacies owned and operated by the covered entity. When PBMs reduce reimbursement rates to the covered entities' owned pharmacies, the margins at the vertically integrated contract pharmacies may exceed those at the covered entities' owned pharmacies. This creates further incentives for utilization through the vertically integrated contract pharmacy.

11 Aaron Vandervelde and Andrew Brownlee, *Revisiting the Pharmaceutical Supply Chain: 2013-2018*, BRG white paper (January 2020), available at: <https://ecomunications.thinkbrg.com/44/1613/uploads/vandervelde-pharmaceutical-supply-chain-2020-final-cleaned.pdf>

12 Hatwig, Christopher, *The 340B Prime Vendor Program; Supporting All 340B Stakeholders*, Apexus PPT presentation (2014).

13 Government Accountability Office, "DRUG DISCOUNT PROGRAM: Federal Oversight of Compliance at 340B Contract Pharmacies Needs Improvement" (June 21, 2018), available at: <https://www.gao.gov/products/GAO-18-480>



Vertical Integration of National Pharmacies				
Health Plan	Aetna	Cigna HealthSpring		United Healthcare
PBM	CVS Caremark	Express Scripts		OptumRX
Pharmacy <i>(retail, mail order and/or specialty pharmacy)</i>	CVS Caremark	Accredo	Walgreens	OptumSpecialty
Third Party 340B Services Firm	Wellpartner	Verity Solutions	340B Complete Shields Health Solutions	

Third, the outsized profit margins on 340B purchased medicines may contribute to additional consolidation and vertical integration in the healthcare marketplace. Three of the largest pharmacy chains participating in the 340B program (Walgreens, CVS Health, and Accredo), have developed or acquired 340B contract pharmacy administrators (see Figure 5). Contract pharmacy administrators develop and operate the software algorithms that determine 340B eligibility and enable the for-profit pharmacies to influence which prescriptions are classified as 340B. Walgreens recently announced an equity investment in Shields Health Solutions,<sup>14</sup> which operates 340B hospital outpatient pharmacies on an outsourced basis; and Optum recently completed a series of 340B contract pharmacy acquisitions to create Optum Specialty (Optum acquired Diplomat<sup>15</sup> and Avella). As consolidation and vertical integration in the 340B contract pharmacy space continues, 340B covered entities will likely be forced to give up a growing share of 340B program income to these for-profit entities.

## Conclusion

The role of contract pharmacies has evolved extensively since HRSA allowed 340B covered entities to contract with an unlimited number of for-profit pharmacies in 2010. What began as a close alignment between 340B covered entities serving indigent populations and independent community pharmacies has morphed into a sophisticated network of vertically integrated for-profit national pharmacies with enormous power. This evolution has fundamentally altered the 340B program and resulted in for-profit entities earning substantial profits through complex profit-sharing agreements with the 340B covered entities. Fueled by margins that are three times greater than the average non-340B medicine, the 340B contract pharmacy channel has grown dramatically over the last ten years and now accounts for over 25 percent of all margins realized by pharmacies and providers in the United States. The growing prevalence of these arrangements is taking the 340B program farther away from its original intended goal of helping safety-net entities provide care to vulnerable patients.



14 Walgreens, "Shields Health Solutions Receives Equity Investments from Welsh, Carson, Anderson & Stowe and Walgreen Co.," press release (July 30, 2019), available at: <https://news.walgreens.com/press-releases/general-news/shields-health-solutions-receives-equity-investments-from-welsh-carson-anderson-stowe-and-walgreen-co.htm>

15 Tozzi, John, "UnitedHealth Bought Pharmacy Company Avella to Build Optum Unit," *Bloomberg* (October 16, 2018), available at: <https://www.bloomberg.com/news/articles/2018-10-16/unitedhealth-bought-pharmacy-company-avella-to-build-optum-unit>





### Case Study #1

**Description:** Academic medical center that is part of a Midwestern health system  
**Covered Entity Type:** Disproportionate Share Hospital (DSH)  
**Total Contract Pharmacy (CP) Arrangements:** 250+

Category	Year of First Registration	Date of Most Recent Registration	Percent of Total Active CP Network	Average Distance from Parent Site (mi)
Independent Pharmacies	2011	1/1/2020	22%	80.868
Chain Retail Pharmacies	2012	4/1/2020	64%	55.092
Specialty Pharmacies	2011	4/1/2020	14%	611.212

### Case Study #2

**Description:** Grantee community health center located in the Northeast  
**Covered Entity Type:** Community Health Center (CH)  
**Total Contract Pharmacy (CP) Arrangements:** 9

Category	Year of First Registration	Date of Most Recent Registration	Percent of Total Active CP Network	Average Distance from Parent Site (mi)
Independent Pharmacies	2015	7/1/2019	100%	8.394
Chain Retail Pharmacies	N/A	N/A	0%	N/A
Specialty Pharmacies	N/A	N/A	0%	N/A

*These are meant for illustrative examples. Actual contract pharmacy arrangements may vary*

# Appendix A: Methodology

The analysis in this paper encompasses all 340B covered entities and their respective contract pharmacies registered with Health Resources and Services Administrations (HRSA) since the inception of the program in 1992. Figures related to 340B discounts and contract pharmacy profit margins are estimates, as exact calculations would require data proprietary to the parties involved, such as detailed gross sales figures and rebate data. Therefore, these estimates rely primarily upon publicly available data or data that can be purchased through third-party vendors. In some instances, certain figures in the analysis have been estimated, conservatively, based on the authors' direct and extensive industry experience. These instances are noted below.

To understand the growing prevalence of contract pharmacies in the 340B channel as well as overall program growth, we rely upon information obtained directly from HRSA reports. Current and historical registrations for both covered entities and contract pharmacies can be obtained directly from HRSA's Office of Pharmacy Affairs (340B OPAIS) website. After acquiring data from HRSA, additional analysis and research was required for the following:

- Identification of pharmacy chains/ownership (parent corporate entities).
- Classification of pharmacy channel:
  - > Most pharmacies can be classified as retail (brick and mortar) or specialty/mail pharmacies. Specialty/mail pharmacies generally focus on dispensing higher-cost medicines that may require special handling, such as cold storage. These medicines are frequently used in therapeutic areas such as immunology, oncology, or virology.
- Identification of exact geographical location (latitude and longitude) of covered entities and contract pharmacies.
- Association of demographic information based on geographic location.
- Association of Hospital Cost Report data (HCRIS).

To estimate the average 340B discount for contract pharmacy dispensed medicines, we identified a market basket of medicines representative of those medicines dispensed at contract pharmacies. First, we identified the top two hundred medicines by gross sales in the US, then limited our analysis to self-administered brand medicines with enough gross volume to be material to our calculations. Although generic medicines are included in the 340B program, margins associated with these medicines are often too small to support the fees associated with contract pharmacy utilization and were therefore excluded in our analysis. Physician-administered medicines are rarely dispensed through contract pharmacies and were also excluded from

the analysis. Though our methodology does not include the full universe of 340B eligible products, our market basket is highly representative of the products that drive 340B contract pharmacy margins.

After identifying our market basket of eighty-six medicines, we estimated the two components of the 340B price for each medicine as outlined above—*2018 CPI Penalty* and *Basic Medicaid Rebate*—and calculated the 340B discount by comparing the estimated 340B price with the WAC for each medicine. Our final estimated 340B discount of 72 percent reflects the average of these discounts weighted by each medicine's gross sales.

**2018 CPI Penalty:** We relied on Elsevier Gold Standard pricing data to determine the WAC for each medicine at launch and in 2018. We assumed the average manufacturer's price (AMP) to be 98 percent of WAC both at launch and in 2018. Inflation data was collected from the Bureau of Labor and Statistics and used to establish the allowable increase in AMP for each product. The CPI penalty was calculated as the difference between the allowable AMP in 2018 versus the estimated 2018 AMP derived from the Gold Standard pricing data.

**Basic Medicaid Rebate:** As discussed in this study, this is the greater of the base Medicaid rebate (23.1 percent of AMP) or the Best Price, which represents the discount from AMP of the lowest available commercial price offered by the pharmaceutical manufacturer. The lowest available commercial price is typically the difference between the WAC and the largest rebate offered to commercial health plans. As rebate data is proprietary, we relied upon public disclosures and MACPAC estimates of Medicaid rebate amounts by therapeutic class as a proxy for the Best Price. Because the MACPAC data represents an average rebate amount for a therapeutic category (as opposed to the largest rebate), we believe the proxy rebate amount to be below the Best Price for each medicine, and therefore consider our discount estimate and the resulting profit margin calculations to be conservative.

To estimate contract pharmacies' share of 340B profit margins, we first calculate contract pharmacies' share of all 340B sales. We estimate that in 2018, 25 percent of all sales for medical-benefit medicines (physician-administered) and 6 percent of pharmaceutical-benefit medicines (self-administered) were dispensed in a 340B setting—whether at an outpatient or contract pharmacy. These estimates were informed by our experience working directly with a broad group of manufacturers participating in the 340B program and analysis of Medicare Part B and Part D claims data. Using this information in conjunction with IQVIA estimates<sup>16</sup> of the breakout between self-administered and physician-administered branded medicines and our estimate of the average branded discount in for 340B self-administered medicines in 2018 (72 percent), we approximate that 21 percent of all 340B sales are for self-administered medicines. Our final calculation is outlined in Table 3:

Table 3: Methodology to Estimate 340B Profit Margin

Step	Calculation	Estimated Value
A	Total Indirect Sales at 340B Price	\$24.3 B
B	% of 340B Sales for Retail Medicines	21%
C = A x B	Total Retail Sales at 340B Price	\$5.2 B
D	Avg. 340B Retail Discount	72%
E = C / (1-D) x 1.1	Gross 340B Retail Sales (Direct & Indirect)	\$18.6B
F = E-C	340B Profit Margin on Retail Sales	\$13.2

16 IQVIA, "2018 Medicine Use and Spending in the US" (May 2019), available at: [https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/medicine-use-and-spending-in-the-us--a-review-of-2018-outlook-to-2023.pdf?\\_=1573048662823](https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/medicine-use-and-spending-in-the-us--a-review-of-2018-outlook-to-2023.pdf?_=1573048662823)

## About the Authors

### AARON VANDERVELDE

avandervelde@thinkbrg.com | 202.480.2661

Aaron Vandervelde has over fifteen years of experience providing strategy, health policy, and litigation consulting services to clients in the healthcare industry. He specializes in financial and economic analysis of health policy and provides litigation consulting services related to issues arising from contracts and transactions between healthcare entities and with the federal government. Specifically, he focuses on deriving strategic insight through the integration and analysis of large, complex data sets including claims data, risk adjustment data, internal and external sales data, and publicly available health data.

### KEVIN ERB

kerb@thinkbrg.com | 202.480.2742

Kevin Erb is a managing consultant at BRG who uses his extensive data analytics background to deconstruct and provide insights into the complex issues of today's healthcare environment. He provides advisory and litigation consulting services to entities across the healthcare spectrum by bringing together industry expertise with proprietary, client, and third-party data. He focuses on pharmaceutical forecasting, transactions, and compliance within the 340B program and other federal drug purchasing programs.

### LAUREN HURLEY

lauren.hurley@thinkbrg.com | 202.839.3922

Lauren Hurley Lauren Hurley is a consultant in BRG's Health Analytics practice. She leverages her analytical skills to provide data-driven solutions to help clients better navigate the diverse challenges of the healthcare industry. She has provided both advisory and litigation consulting services to various healthcare entities, but currently focuses on issues related to the pharmaceutical supply chain.



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