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Competition in pharmacy benefit manager markets and vertical integration with insurers: 2026 Update

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Executive summary

This American Medical Association Policy Research Perspective assesses competition in pharmacy benefit manager (PBM) markets and the extent of vertical integration between insurers and PBMs. These are important questions of public policy because less competition and vertical integration can lead to consumer harm.

In addition, given its close relationship with PBM markets, this study also assesses competition in prescription drug plan (PDP) insurance markets. Levels and changes in PBM market structure are partly determined by levels and changes in PDP insurance market structure.

Using 2022 and 2024 data on PDP insurance lives and on the PBMs that insurers use to manage those lives, the study presents a descriptive analysis of PBM markets. PBM market shares and the Herfindahl-Hirschman Index (HHI)—a measure of market concentration—are computed and used to assess competition. Similarly, insurers' market shares and HHIs are calculated to assess competition in PDP insurance markets. High market concentration suggests low competition.

This study finds that UnitedHealth Group is the largest PDP insurer nationally in the commercial and Medicare Advantage PDP markets and the third largest in the standalone PDP market. Humana is the second largest insurer in the Medicare Advantage PDP market and Centene is the largest insurer in the standalone PDP market.

PDP insurance markets are highly concentrated (HHI>1800) on average. Between 2022 and 2024, the average commercial HHI across PDP regions fell by 149 points to 2578, increased slightly to 2406 in Medicare Advantage PDP markets, and increased to 2214 in standalone PDP by 234 points.

Turning to PBMs and focusing on rebate negotiation, OptumRx was the largest PBM in the U.S. with a 23% share in 2024. Very closely behind is Express Scripts as the second largest PBM with a 23% share, followed by CVS/Caremark (18% share) and Prime Therapeutics (11% share). The collective market share of those four PBMs was 75% in 2024—up significantly from 70% in 2022.

Local PBM markets are also highly concentrated (HHI>1800) on average and became even more concentrated between 2022 and 2024. The average HHI across PDP regions was 2574—a 164-point increase from 2022. The proportion of markets that were highly concentrated increased from 82% in 2022 to 94% in 2024.

Nationally, 69% of PDP lives are covered by an insurer that is vertically integrated with a PBM. However, there is variation by payer type. Sixty-seven percent of commercial PDP lives are vertically integrated, compared to 73% in Medicare Part D. *Within* Part D, 77% of Medicare Advantage PDP lives are vertically integrated, while the vertically integrated share in standalone PDP is 67%. There is also wide variation in the extent of vertical integration across PDP regions, with some PDP regions having little vertical integration, while others are almost entirely so.

These findings have important antitrust implications. Although in theory there could be benefits from high PBM market concentration and vertical integration, these can also cause competitive harm. Low competition can also lead to higher prices paid by insurers for PBM services, higher insurance premiums, PBMs not fully passing rebates through and lower reimbursement to pharmacies. Empirical evidence is needed to shed light on these questions. Moreover, given extensive vertical integration of insurers and PBMs, unintegrated insurers may be losing access to PBMs and/or getting smaller rebates and thus may be charging higher premiums. Here there is some evidence that competitive harm dominates (Gray, Alpert and Sood, 2026). The findings in this study highlight whether proposed or consummated mergers among PBMs and between insurers and PBMs should raise antitrust concerns.

In theory, PBMs can be beneficial for consumers, but they can also cause competitive harm

Pharmacy benefit managers (PBMs) are critical participants in health and prescription drug plan (PDP) insurance markets and the supply chain for prescription drugs. They manage PDP benefits for the vast majority of Americans and partly determine the prices of drugs. PBMs are receiving much scrutiny from policymakers and regulators. Congress has held numerous hearings in the last four years and there has been a considerable amount of proposed federal and state legislation seeking to regulate them (Guardado, 2025). In 2025, the Federal Trade Commission (FTC) released its second "Interim Staff Report on PBMs" (Federal Trade Commission, 2025). This year a federal law titled the Consolidated Appropriations Act was passed. It places restrictions on PBM compensation in the Medicare Part D market, requiring that rebates obtained by PBMs are "fully passed through" (McCuskey, 2026). Congress also reintroduced a bill that would prohibit PBMs and pharmacies from being under common ownership (Patients Before Monopolies Act, 2026).

Prescription drug prices are influenced through a supply chain of drugs that begin with drug manufacturers' list prices and that go through multiple stages before reaching final consumers. PBMs are middlemen between manufacturers and plan sponsors (insurers and self-insured employers). PBM functions are inputs to the production of health and PDP insurance services and thus determinants of premiums. These functions include negotiating rebates with manufacturers, managing drug formularies, adjudicating pharmacy claims, designing drug benefits and assembling retail pharmacy networks. PBMs may also own specialty, mail-order and retail pharmacies. PBMs were created in the 1960s to help health insurers contain drug spending. They conduct utilization management such as prior authorization and step therapy.

In theory, PBMs can be beneficial for consumers, but they can also cause competitive harm. PBMs can stimulate price competition among drug manufacturers by shifting demand among competing substitute drugs. In turn, manufacturers pay rebates to PBMs for their drugs to be placed favorably in a drug formulary. PBMs are then supposed to pass those rebates through to plan sponsors, thereby lowering drug prices. However, it is not clear whether PBMs are (fully) passing those rebates through. Importantly, PBM markets need to be competitive for full pass-through to occur. Consolidation in the PBM market, combined with opaque pricing due to confidentiality of rebates, may be causing higher pharmaceutical prices (Garthwaite and Scott Morton, 2017). Another view is that the use of rebates can also lessen competition, as the FTC has questioned their legality and announced that it would ramp up enforcement against the use of illegal bribes and rebate schemes that foreclose (prevent) competition from cheaper drugs (Federal Trade Commission, 2022). In sum, although PBMs can negotiate lower prices from drug manufacturers, they can also lessen competition and raise the prices of drugs.

PBMs serve two "roles" along the supply chain, and it is important to distinguish between these roles when thinking about the effects on consumer welfare. First, PBMs are intermediaries between drug manufacturers and insurers (Brot, Che and Handel, 2025; Ho and Lee, 2024; Dranove, Rothman and Toniatti, 2019). They negotiate rebates and the placement of drugs on formularies. High PBM market concentration may increase their bargaining power with drug manufacturers and thus the ability to obtain higher rebates, which, if passed through to consumers, would be a good thing. However, those savings may not reach final consumers if insurers don't pass them through (Dranove et al., 2019; Dafny, Duggan and Ramanarayanan, 2012). In their second role, PBMs are suppliers to insurers (Brot et al. 2025; Dranove et al. 2019). High concentration and low competition in PBM markets may lead to higher PBM prices paid by insurers, which could then lead to higher premiums.

The objective of this study is to assess competition in PBM markets and estimate the extent of vertical integration between insurers and PBMs. Using 2022

and 2024 data from the Decision Resources Group (DRG) on PDP insurance coverage lives and the PBMs insurers use to manage those lives, PBM market shares and market concentration levels are computed. The first two editions of this study (2022 and 2023) focused only on commercial PDP coverage lives, and the local geographic markets were based on metropolitan statistical areas (MSAs) and states. Like the 2024 and 2025 updates, this edition also includes Medicare Part D lives and defines local markets as *PDP regions*.[1,2] New in this edition is that the extent of vertical integration is also presented by both Medicare Advantage PDP and standalone PDP lives.

This research is novel in several ways. First, it provides information on five different PBM functions. Second, it assesses local level PBM market competition in addition to the national level. Third, it contains information on whether insurers self supply PBM functions or whether they access PBMs. Fein (2025) reports market shares of the six largest PBMs. However, they are based on only one type of PBM function (adjudicated drug claims), only nationally, and little information is provided about the insurers that use them, particularly whether insurers self supply PBM services.

When examining PBM markets, it is useful to consider the market shares of the insurers providing drug benefits, since they are the same covered lives managed by the PBMs. If an insurer is large in the PDP insurance market, then the PBM that manages its lives would be large as well. Levels and changes in *PBM market concentration* are partly a function of levels and changes in *insurance market concentration*. Thus, this study also presents the 10 largest insurers' national-level market shares as well as average concentration levels in commercial PDP and Medicare Part D markets.

Insurers face a "make or buy" decision—they can supply a PBM function in house (make) or go to the market and use a PBM (buy). For each of the five PBM functions, the DRG data report the PBM supplying that function or whether the insurer performs it "in house." Thus, one can quantify the extent of vertical integration between insurers and PBMs.

In theory, vertical integration and exclusivity between PBMs and insurers can be good or bad for consumers. On the harm side, there is a risk of *input* foreclosure or raising rivals' costs and a risk of *customer* foreclosure (Salop, 2017). A PBM could raise the costs of its insurer rivals by passing through smaller rebates to those rivals (Brot et al., 2025). However, vertical integration can also lead to reductions in double marginalization and other efficiencies that could be passed through to consumers as lower premiums.[3] Thus, the effect of PBM-insurer integration is ambiguous. Empirical evidence is still limited but so far is more consistent with harm. Gray, Alpert and Sood (2023) provide evidence of input foreclosure in the Part D standalone PDP market. They study a large 2015 insurer-PBM merger and find that non-vertically integrated insurers experienced increases in premiums after the merger but no evidence that the merged firm lowered premiums.

Data and methodology

The data on PDP insurance coverage lives and the PBMs insurers use to manage them are from DRG. The first two editions of this study used data for 2020 and 2021 and focused only on commercial PDP lives. The last three editions including this one include Medicare Part D. DRG asks insurers for their number of PDP covered lives as well as for the PBMs that manage them. They obtain Part D data from CMS.

1. There are two types of PDP insurance coverage. In Part D, one is tied to a health plan and is known as Medicare Advantage PDP. The other does *not* include health insurance and is sold as a standalone product. In the first two editions, it was natural and simple to define geographic markets at the MSA and state levels since they focused on commercial coverage where the PDP lives were tied to a health plan. However, inclusion of standalone PDP lives and their disconnect from health insurance presented a challenge in defining geographic markets as MSAs and states. Instead, this study turned to what the Centers for Medicare & Medicaid Services (CMS) define as *PDP regions*, where insurers make bids to provide PDP coverage. There are 34 PDP regions in the U.S.
2. Thus, the results in this edition are comparable only to the ones in the 2024 and 2025 editions. For results based on only commercial drug coverage lives and at the state and MSA levels, see Guardado (2023).
3. Double marginalization occurs when two firms with market power in a vertical supply chain each charge a markup over a competitive price. In theory, vertical integration can reduce this double marginalization since the merged firm would only charge one markup instead of two.

In employer-sponsored insurance, employers may choose not to get drug coverage from their insurer and instead *carve it out* and buy the drug benefit separately. Similarly, a standalone PDP does not cover physician and hospital services and is typically used by beneficiaries in traditional Medicare. This study includes both Medicare Advantage PDP and standalone PDP lives. For the first time, DRG provided the 2024 PBM and PDP lives data separately for Medicare Advantage PDP and standalone PDP.

The *commercial* drug insurance lives in the DRG data are part of a health plan that includes both a medical and drug benefit; carved-out lives are excluded. As a result, the commercial data are missing about 39% of commercial lives in the combined fully insured and self-insured markets.[4] However, because this study includes Part D lives, where that is not an issue, the share of missing lives across commercial and Part D markets is much lower than that.

The data can be used to quantify the extent of vertical integration between insurers and PBMs. They include the PBM used by insurers to perform each of five different functions, including *rebate negotiation* (negotiation of rebates with drug manufacturers), *retail network management* (assembling of retail pharmacy networks), *claims adjudication* (administering and processing of pharmacy claims information), *formulary management* (controlling of the drug formulary—a list of drugs deemed most medically appropriate and cost effective by the entity with control of it), and *benefit design* (a means to incentivize the use of certain drugs over others, such as through tiering, copays and coinsurance). Alternatively, if the insurer performs the function itself, "in house" is reported. This study considers an insurer vertically integrated if it meets at least one of two criteria for a PBM function. One is that the PBM reported is "in house." The other is that the PBM shares ownership with the insurer. If the insurer uses a PBM with which it shares ownership for at least four of the five functions *within* commercial, Medicare Advantage PDP, *or* standalone PDP lives, those lives are considered vertically integrated.

To calculate firms' market shares, the market in which competition takes place needs to be defined.[5] Markets are characterized by two aspects: a geographic market and a product market. Although national level market shares are presented for the 10 largest insurers, PDP insurance markets are generally local and are defined at the PDP region-level.[6]

In contrast, the PBM geographic market is defined at both national and local levels. There are reasons why PBM markets may be both national and local. For example, of the 10 largest PBMs providing rebate negotiation services in our data (collective share of 99%), five do so in all 34 PDP regions (collective share of 71%). This suggests the PBM market may be national.

However, there are plausible reasons why PBM markets may also be local. First, 28% of the national market gets their PDP benefits managed by a PBM without a national presence. Thus, the degree of concentration at the national level may not necessarily reflect the degree of concentration that is relevant to all consumers. Second, health and PDP insurance markets (the PBMs' customers) are local. Relative PBM-insurer bargaining power and competition may thus be determined locally. Moreover, analogous to health insurers' assembly of hospital and physician networks, PBMs assemble networks of pharmacies. If pharmacies need to be close to consumers for them to buy drugs, it is plausible that retail pharmacy markets may be local as well. A national survey found that 85% of adults prefer getting prescription drugs from a local pharmacist instead of a mail order service (National Community Pharmacists Association, 2021).

A product market is a product or group of products for which there are no adequate substitutes. At the outset, all five PBM functions were candidates to be considered as product markets. However, at the national level, formulary management for an

4. DRG estimates that about 10% of fully insured commercial drug coverage lives and 65% of commercial self-insured lives are carved out. Of the health insurance lives in the DRG data, 47% are fully insured, and 53% are self-insured. 39% is a weighted average of the carved-out shares in the self-insured and fully insured commercial markets.
5. Similar methodologies to the ones used in Competition in Health Insurance, which exclude some of the raw *health insurance* commercial and Medicare Advantage PDP lives, are used here as well (Guardado and Kane, 2025). Specifically, the study excludes insurers' (and the associated PBMs') lives from areas where they are not licensed to sell insurance.
6. National-level market shares do not necessarily reflect the degree of concentration that is relevant to most consumers. Nonetheless, they are a useful summary measure, paint a succinct picture that complements local-level market concentration, and motivate the PBM market results.

aggregate 28% of drug coverage lives was reported as being conducted in house by insurers.[7] The share for benefit design was similar (29%). In contrast, the in-house shares were only 1% to 2% for the other three PBM functions. For this reason, this paper assesses PBM market competition based only on *rebate negotiation, retail network management and claims adjudication*.

Results

Market shares

Drug insurer market shares and market concentration

Exhibit 1 reports national-level market shares of the 10 largest PDP insurers in 2024, their shares in 2022, and the average HHI across PDP regions.[8] Shares and average HHIs are shown separately for the commercial, Medicare Advantage PDP, and standalone PDP markets. Not surprisingly, the commercial PDP and Medicare Advantage PDP insurers, with one exception, are the same 10 largest commercial and Medicare Advantage *health* insurers in the U.S. (Guardado and Kane, 2025).[9]

UnitedHealth Group (UHG) is the largest insurer in the commercial PDP and Medicare Advantage PDP markets, as well as the third largest in the standalone PDP market with 14%, 30% and 18% shares, respectively. The second, third and fourth largest commercial insurers are Kaiser, Cigna and Elevance Health each with 10% shares. The fifth largest commercial insurer is CVS Health (Aetna), which has a share of 8%.

Humana is the second largest Medicare Advantage PDP insurer with a 19% share, followed by CVS Health (Aetna) with an 11% share. Centene became the largest insurer in the standalone PDP market with a 28% share—up significantly from 18% in 2022. It took the top spot from CVS Health (Aetna), which has a 23% share.

Some insurers only sell standalone PDP plans but not health insurance, such as Delaware Life, Rite Aid and Mutual of Omaha. However, such insurers have been exiting the market. In 2024, Delaware Life was the sixth largest standalone PDP insurer with a 2% share, and Mutual of Omaha was ninth with a 1% share, but they exited the market in 2025. Rite Aid was sixth largest in 2022, but it has also exited. These exits will largely leave the standalone PDP market to the big insurers that also sell health insurance.

PDP insurance markets are highly concentrated (HHI>1800) on average.

PDP insurance markets are highly concentrated (HHI>1800) on average. In 2024, the average commercial HHI across PDP regions was 2578—a decrease of 149 points. In the Medicare Advantage PDP market, it was 2406 and in the standalone PDP market, it increased by 234 points to 2214.

PBM market shares for rebate negotiation, retail network management and claims adjudication

Exhibit 2 reports national-level market shares of the 10 largest PBMs in the rebate negotiation, retail network management and claims adjudication markets in 2024, along with their shares in 2022.[10,11] In contrast to Exhibit 1, which focuses on market shares of PDP *insurers* and presents them *separately* for commercial, Medicare Advantage PDP and standalone PDP lives, Exhibit 2 presents market shares for *PBMs*, which are based on those three types of lives *combined*. In general, the results show little

7. These proportions are the aggregate market shares of *all* insurers supplying formulary management and benefit design in house. They fell from the 35% and 36% found in 2022 due DRG changing Elevance's PBM from "in house" to its PBM—CarelonRx.
8. The HHI is the Herfindahl-Hirschman Index—a measure of market concentration—which is equal to the sum of the squared market shares of all firms in a market. A market is highly concentrated if its HHI>1800.
9. The ranking and some market shares differ slightly given that insurers' numbers of *drug* and *medical* covered lives can differ. Part of the difference is due to the carve out of drug benefits and because some health insurance plans do not include a drug benefit.
10. Certain PBMs' shares reported include lives of more than one subsidiary, which this study combined. In 2022, CVS Health included Caremark and Aetna Pharmacy Management, and Intermountain included Scripius. In both 2022 and 2024, Prime Therapeutics includes Magellan, and in 2024, Pharmacy Benefit Dimensions includes lives that its insurer owner, Independent Health, managed *in house*.
11. There are a few differences in the national-level PBM market shares presented in Exhibit 2 compared to those from Fein (2025). The Appendix explores potential explanations for the differences.

difference across PBM functions. Thus, the following discussion focuses on rebate negotiation. To get a glimpse into insurer-PBM vertical integration, the PBM's co-owned insurer is reported in parenthesis.

OptumRx was the largest PBM in the U.S. in 2024. Its national market share was 23%—up from 21% in 2022. Closely behind is Express Scripts with a nearly identical 23% share. Express Scripts's share increased significantly from 17% in 2022. Its share grew in large part because it started to manage the benefits of Centene, which is the among the largest commercial and Medicare Advantage PDP insurers, and the largest standalone PDP insurer in the U.S. Centene had been previously using the CVS/Caremark PBM. Consequently, CVS/Caremark's market share fell to 18% and fell to the third largest in 2024 after being the largest PBM in 2022.[12] OptumRx's, CVS Health's and Express Scripts's large PBM shares are due to their insurer counterparts' big presence in the insurer market and because they manage several other insurers' drug benefits as well.

These PBMs are followed by Prime Therapeutics, whose share is 11%. Insurers that are smaller at the national level may not have the scale to own PBMs. This characterizes the vast majority of Blue Cross Blue Shield (BCBS) insurers. However, several BCBS insurers *jointly* own Prime Therapeutics. Prime is almost exclusively used by BCBS insurers, including some that do not own it.

Kaiser Pharmacy (8% share) is the fifth largest PBM and is used exclusively by Kaiser. The sixth largest PBM is CarelonRx, which has an 8% share.[13] Although initially exclusively (and still largely) used by its owner (Elevance Health), CarelonRx is now also used by another BCBS insurer. CenterWell Pharmacy, whose share of 5% makes it the seventh largest PBM, is used exclusively by its owner Humana. The 10th largest "PBM" is the integrated insurer/health system HealthPartners, which conducts rebate negotiation *in house*. These PBMs' market shares are also large due to their insurer counterparts' big presence in insurer markets.

Notably, the seven largest PBMs have a collective market share of 96%, while the 10 largest PBMs' share is 99%. All 10 PBMs share ownership with health insurers. It is only in the retail network management and claims adjudication markets where any PBMs not affiliated with a health insurer appear in the top 10—SS and C Health and MedImpact. This suggests a significant degree of vertical integration between insurers and PBMs.

PBM market shares for formulary management and benefit design

Exhibit 3 reports the 10 largest market shares of firms providing formulary management and benefit design and yields some interesting findings. First, it shows that three insurers are among the largest "PBMs" providing formulary management and benefit design (Centene, BCBS of Michigan, and BS of California), which is not surprising since these are the functions more commonly performed in house. Second, the three largest PBMs' market shares in the rebate negotiation, retail network management and claims adjudication markets decrease considerably in the markets for formulary management and benefit design. This is because some insurers that use those PBMs for those former three functions conduct formulary management and benefit design in house.

PBM market concentration

Exhibit 4 presents estimates of PBM market concentration at the national and PDP region-levels for the rebate negotiation, retail network management and claims adjudication markets. The results are generally similar across PBM functions so the following discussion focuses on rebate negotiation. Nationally, the four-firm concentration ratio (CR4) was 75%

12. Centene announced in 2022 that it would switch PBMs from CVS/Caremark to Express Scripts in 2024. According to the data source, (1) Centene was already also using its own PBM (Envolve) as well as CVS/Caremark for some PBM services and continued doing so through 2023; and (2) there was pulling back of some PBM services from CVS/Caremark during the transition period. Because of this, the data source switched the PBM used by WellCare—a subsidiary of Centene—in the 2023 Part D data from CVS/Caremark to Envolve. Because WellCare is so large in Part D, this caused large shifts in enrollments and shares in 2023. Envolve's shares increased while CVS/Caremark's shrank. In turn, this caused decreases in PBM market concentration and increases in vertical integration in the 2023 data. However, those changes were only transitory and temporary. In the 2024 data used in this edition, Centene's PBM is now Express Scripts, and its PBM, Envolve, which is extinct, is no longer in the data.
13. IngenioRx changed its name to CarelonRx as of January 1, 2023.

in 2024—up significantly from 70% in 2022.[14] This indicates that the four largest PBMs collectively have a 75% share of the national market. The increase in PBM market concentration is largely due to Express Scripts's market share going up (by about 6 percentage points) and to a lesser extent a rise in the share of OptumRx.

Turning to the local level, the average PBM market is highly concentrated (HHI>1800), and it became more concentrated between 2022 and 2024. The average HHI across PDP regions was 2574 in 2024—up from 2410 in 2022. The vast majority (94%) of PBM markets were highly concentrated in 2024—up from 82% of markets in 2022.

Extent of vertical integration of insurers and PBMs

Exhibit 5 presents 2022 and 2024 shares of drug lives covered by an insurer that is vertically integrated with a PBM. Shares for both years are shown for the combined commercial and Medicare Part D markets as well as for those two markets separately. Shares in 2024 are also presented for the two components of Medicare Part D—Medicare Advantage PDP and standalone PDP.[15]

Sixty-nine percent of combined market drug lives at the national level were vertically integrated in 2024

Turning to the local level, the average PBM market is highly concentrated (HHI>1800), and it became more concentrated between 2022 and 2024.

—a small decrease from 72% in 2022.[16] There is variation in the extent of vertical integration by payer type. Sixty-seven percent of commercial PDP lives were vertically integrated in 2024, compared to 73% in Part D. Moreover, there is also variation *within* Part D. In 2024, 67% of standalone PDP lives were vertically integrated, compared to 77% in Medicare Advantage PDP. Locally, on average, 67% of drug lives across PDP regions were vertically integrated in 2024. However, there is wide variation across PDP regions, with some PDP regions having little vertical integration, while others are almost entirely so. The PDP region with the smallest vertical integration share (Michigan) has only 25% of its lives vertically integrated, whereas the highest share of 93% is in Colorado.

Conclusion

This study assesses competition in PBM markets and vertical integration of insurers with PBMs. Using data from 2022 and 2024, it provides information on five different PBM functions as well as for local markets. It finds that for three of the functions (rebate negotiation, retail network management and claims adjudication), insurers largely use a PBM. It assesses competition based on those three functions. It also assesses competition in PDP insurance markets.

UnitedHealth Group is the largest PDP insurer nationally in the commercial (14% share) and Medicare Advantage PDP (30% share) markets, as well as third largest in the standalone PDP market with an 18% share. Kaiser, Cigna and Elevance Health are the second, third and fourth largest insurers in the commercial market with 10% shares, followed by CVS Health (Aetna), whose share is 8%.

14. The last edition of this study reported modest decreases in PBM market concentration between 2022 and 2023 (Guardado, 2025). Importantly, those decreases need to be interpreted with strong caution, as they were largely driven by the *transitory and temporary* phenomenon discussed above in footnote 12, which only affected the Part D data. That is, the observed decrease in PBM market concentration was largely driven by the insurer Centene's *temporary* PBM switch from CVS/Caremark to its own Envolve.
15. As explained in the Data section, Medicare Advantage PDP and standalone PDP lives were combined in the data prior to 2024.
16. There were large observed increases in vertical integration in 2023 (Guardado, 2025). However, they need to be interpreted with strong caution, given the phenomenon discussed above in footnote 12. For 2023, the data source switched the PBM used by the insurer Centene to its own PBM, Envolve, making it appear as though Centene became vertically integrated. In this year's edition, Centene uses Express Scripts and is thus not integrated.

The findings in this study highlight whether proposed or consummated mergers among PBMs and between insurers and PBMs should raise antitrust concerns.

Humana is the second largest insurer in the Medicare Advantage PDP market with a 19% share, followed by CVS Health (Aetna) with a share of 11%. Centene became the largest insurer in the standalone PDP market with a 28% share in 2024—a sharp increase from its 18% share in 2022. In turn, CVS Health (Aetna) fell to the second largest standalone PDP insurer with a share of 23%.

PDP insurance markets are highly concentrated on average (HHI>1800). Between 2022 and 2024, the average commercial HHI across PDP regions fell by 149 points to 2578, increased slightly to 2406 in Medicare Advantage PDP, and was 2214 in standalone PDP markets—an increase of 234 points.

Turning to PBM markets and focusing on rebate negotiation, OptumRx was the largest PBM nationally in 2024 with a 23% market share. Express Scripts is the second largest PBM and very closely behind with a 23% share—a considerable increase from 17% in 2022. Its market share increased significantly in large part due to the securing of Centene, which had been previously using the CVS/Caremark PBM. Consequently, CVS/Caremark—the largest PBM in 2022—lost market share and fell to third largest with an 18% share in 2024.

Prime Therapeutics ranks fourth with an 11% share. Prime is jointly owned and almost exclusively used by BCBS insurers. Kaiser Pharmacy (8% share) is the fifth largest PBM and is used exclusively by Kaiser. CarelonRx, which is owned and largely used by Elevance Health, has a share of 8%. Finally, CenterWell Pharmacy, which is used exclusively by its owner, Humana, is the seventh largest PBM with a 5% share.

In terms of PBM market concentration, the collective national market share of the four largest PBMs (CR4) is 75%—a significant increase from 70% in 2022. Local PBM markets are highly concentrated on average and became even more concentrated between 2022 and 2024. The average HHI across PDP regions was 2574—an increase of 164 points from 2022. The vast majority of PDP region markets were also highly concentrated. The fraction of PBM markets that were highly concentrated increased from 82% in 2022 to 94% in 2024.

Nationally in 2024, 69% of PDP lives were covered by an insurer that is vertically integrated—down slightly from 72% in 2022. There is variation in the extent of vertical integration by payer type, with a higher vertical integration share in Part D than in commercial markets, as well as *within* Part D, where a higher share of lives are vertically integrated in Medicare Advantage PDP than in standalone PDP. Finally, there is also wide variation across PDP regions.

The findings in this study highlight whether proposed or consummated mergers among PBMs and between insurers and PBMs should raise antitrust concerns. In theory, there could be benefits from high concentration in PBM markets—for example, if large PBMs were to obtain larger rebates and pass them through all the way down to insured consumers as lower premiums or out-of-pocket costs. However, high concentration may also lead to higher prices paid by insurers for PBM services, higher insurance premiums, PBMs not fully passing rebates through, and lower reimbursement to pharmacies. Thus, empirical evidence is needed to shed light on the actual effect on consumer welfare. Notably, some evidence from health insurance markets suggests savings obtained by intermediaries do not get passed through to consumers (Dafny et al. 2012).

On the vertical integration front, theory suggests that there can also be both harm and benefits to consumers. There may be benefits from reductions in double marginalization and other efficiencies if those efficiencies get passed through by plan sponsors to consumers. On the other hand, insurers that are not vertically integrated with PBMs may lose access to PBMs or face higher costs, such as receive smaller rebates than those enjoyed by vertically integrated

insurers, which could then translate into higher premiums. Again, the ultimate effect on consumers is ambiguous and requires empirical evidence. Here there is some evidence that competitive harm dominates (Gray et al., 2025).

More broadly, Kanter and Gaynor (2025) argue that a small number of massive healthcare conglomerate platforms exhibit many of the same concerning characteristics as big tech platforms and that similar antitrust attention and action may be necessary. Policymakers and stakeholders should not only look at those platforms' individual services but instead consider the power and influence created by the merging of services and resulting formation of firms that function as essential healthcare middlemen. The present study finds a handful of firms are large in both PBM and PDP insurance markets, while Guardado and Kane (2025) find this to be the case in health insurance.

These large firms are also participants in other healthcare markets. For example, Kaiser has significant shares in the hospital markets in which it operates (Guardado, 2026), and it is the largest employer of physicians in the U.S. with 25,505 physicians.[17] The most prominent example is UnitedHealth Group, which employs almost 10,000 physicians, is the largest U.S. insurer and PBM, and owns data and analytics, healthcare payments and pharmacy services firms as well.[18] One negative effect of this merging of services is the need for multilevel entry. If a firm acquires businesses in different healthcare markets, rivals may have to do the same to compete effectively, making entry even more difficult. Kanter and Gaynor (2025) argue that the dominance of these large systems denies independent physicians, practitioners and pharmacists the ability to compete fairly.

Some policymakers are already scrutinizing big healthcare firms. In April 2025, the National Association of Attorneys General urged congressional leaders to prohibit PBMs from owning or operating pharmacies (National Association of Attorneys General, 2025). In fact, Arkansas and Tennessee have already enacted such a ban (Governor of Arkansas, 2025; National Community Pharmacists Association, 2026). However, Express Scripts and CVS Health have sued Tennessee over its law. Similarly, Congress has reintroduced a similar bill that would force PBMs to divest their pharmacies (Patients Before Monopolies Act, 2026). The results of the next edition of this study and of the AMA's "Competition in Health Insurance" study will shed light on whether big conglomerates remain big or whether the trend starts to slow or turn in the other direction.

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17. See https://about.kaiserpermanente.org/who-we-are/fast-facts and the AHRQ Compendium of U.S. Health Systems https://www.ahrq.gov/chsp/data-resources/compendium.html.
18. Additionally, UnitedHealth contracts or affiliates with another 80,000 physicians. https://www.healthcaredive.com/news/change-healthcare-cyberattack-congress-unitedhealth-andrew-witty/714954/

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Exhibits

Exhibit 1.

Largest prescription drug plan insurers' market shares at the U.S. national level

Insurer	Market share (%)		Insurer	Market share (%)		Insurer	Market share (%)	
Commercial			Medicare Advantage PDP			Standalone PDP		
	2022	2024		2022	2024		2022	2024
UnitedHealth Group	13	14	UnitedHealth Group	28	30	Centene	18	28
Kaiser	11	10	Humana	19	19	CVS Health (Aetna)	26	23
Cigna	10	10	CVS Health (Aetna)	9	11	UnitedHealth Group	18	18
Elevance Health	10	10	Kaiser	7	7	Cigna	12	12
CVS Health (Aetna)	5	8	Elevance Health	6	5	Humana	15	10
HCSC	5	6	Centene	6	4	Delaware Life	1	2
Centene	3	5	Cigna	2	2	Elevance Health	2	2
BCBS FL	3	3	Highmark	1	1	HCSC	1	1
BCBS MI	2	2	BCBS MI	1	1	Mutual of Omaha	1	1
BS of CA	2	2	SCAN	1	1	Wellmark BCBS	0	0
Mean PDP Region HHI	2727	2578	Mean PDP Region HHI	2350	2406	Mean PDP Region HHI	1980	2214

Source: Author's analysis of data from the Managed Market Surveyor Suite | MSA Rx and Medical | Program | January 1, 2022–24 | Managed Market Surveyor Suite | Managed Market Surveyor | Selected Geography(ies) | January 1,

Notes: Insurers' market shares are based on prescription drug plan (PDP) coverage lives. There are 34 PDP regions in the United States. For Medicare Advantage PDP, data are only for 33 PDP regions since Medicare Advantage is not available in one of them (Alaska). Wellmark BCBS's market shares were 0.3% and 0.4% in 2022 and 2024.

Exhibit 2.

Largest pharmacy benefit managers' market shares in the U.S. Combined commercial and Medicare Part D markets

PBM	Rebate negotiation share (%)		PBM	Retail network management share (%)		PBM	Claims adjudication share (%)	
	2022	2024		2022	2024		2022	2024
OptumRx (UnitedHealth)	21	23	OptumRx (UnitedHealth)	21	23	OptumRx (UnitedHealth)	21	23
Express Scripts (Cigna)	17	23	Express Scripts (Cigna)	17	23	Express Scripts (Cigna)	17	23
CVS/Caremark (Aetna)	21	18	CVS/Caremark (Aetna)	21	18	CVS/Caremark (Aetna)	20	17
Prime Therapeutics (BCBS)	10	11	Prime Therapeutics (BCBS)	10	11	Prime Therapeutics (BCBS)	9	10
Kaiser Pharmacy (Kaiser)	9	8	Kaiser Pharmacy (Kaiser)	9	8	Kaiser Pharmacy (Kaiser)	9	8
CarelonRx (Elevance)	8	8	CarelonRx (Elevance)	8	8	CarelonRx (Elevance)	8	8
CenterWell (Humana)	7	5	CenterWell (Humana)	7	5	CenterWell (Humana)	7	5
Navitus (SSM/Dean)	1	1	Navitus (SSM/Dean)	1	1	SS and C Health	2	1
Scripius (Intermountain)	1	1	MedImpact	2	1	Navitus (SSM/Dean)	1	1
HealthPartners (Self)	0	0	Scripius (Intermountain)	1	1	MedImpact	2	1

Source: Author's analysis of data from the Managed Market Surveyor Suite | Pharmacy Benefit Evaluator| Program | January 1, 2022–24 | Managed Market Surveyor Suite | Managed Market Surveyor | Selected Geography(ies) | January 1,

Notes: In cases of insurer self supply, the PBM's name is the name of the insurer. HealthPartners is the only insurer that is on this Exhibit. To illustrate insurer-PBM integration, the PBM's co-owned insurer is in parenthesis (or "Self" in the case of the insurer HealthPartners). In 2022, CVS—owner of insurer Aetna—included the Aetna Pharmacy Management PBM. Prime Therapeutics includes its Magellan Rx Management PBM. Navitus is majority owned by Dean Health Plan's owner—SSM Health. CenterWell was Humana Pharmacy Solutions and CarelonRx was IngenioRx in 2022. HealthPartners's market shares were 0.5% in 2022 and 2024.

Exhibit 3.

Largest pharmacy benefit managers' market shares in the U.S. Combined commercial and Medicare Part D markets

PBM	Formulary management share (%)		PBM	Benefit design share (%)	
	2022	2024		2022	2024
OptumRx (UnitedHealth)	17	18	OptumRx (UnitedHealth)	17	18
Express Scripts (Cigna)	10	12	CVS/Caremark (Aetna)	11	12
CVS/Caremark (Aetna)	12	12	Express Scripts (Cigna)	10	12
Prime Therapeutics (BCBS)	8	8	Prime Therapeutics (BCBS)	8	8
Kaiser Pharmacy (Kaiser)	9	8	Kaiser Pharmacy (Kaiser)	9	8
CarelonRx (Elevance)	0	7	CarelonRx (Elevance)	0	7
Centene	5	6	Centene	5	5
CenterWell (Humana)	7	5	CenterWell (Humana)	7	5
BCBS MI	2	2	BCBS MI	2	2
BS of CA	2	1	BS of CA	2	1
Elevance Health	8	0	Elevance Health	8	0

Source: Author's analysis of data from the Managed Market Surveyor Suite | Pharmacy Benefit Evaluator | Program | January 1, 2022–24 | Managed Market Surveyor Suite | Managed Market Surveyor | Selected Geography(ies) | January 1, © 2022-24 DR/Decision Resources, LLC. All rights reserved.

Notes: In cases of insurer self supply, the PBM's name is the name of the insurer. In 2024, formulary management for an aggregate 28% of PDP covered lives was conducted by insurers in house. The share for benefit design was 29%. These shares decreased from 35% and 36%, respectively, in 2022 due to a change in the data source's methodology, which consisted of changing Elevance's PBM from "in house" to its PBM—CarelonRx. Elevance Health is 34th and 35th largest in 2024 for each function (0.3% shares), respectively—not 11th. It is listed to show its 2022 shares. In 2022, CVS—owner of insurer Aetna—included the Aetna Pharmacy Management PBM. Prime Therapeutics includes its Magellan Rx Management PBM.

Exhibit 4.

Pharmacy benefit manager market concentration Combined commercial and Medicare Part D markets

Market concentration measure	Rebate negotiation		Retail network management		Claims adjudication	
	2022	2024	2022	2024	2022	2024
National level						
Four-firm concentration ratio (CR4)	70%	75%	70%	73%	68%	73%
PDP region level						
Mean HHI	2410	2574	2451	2597	2414	2552
Median HHI	2292	2455	2423	2471	2316	2419
% (#) Highly concentrated (HHI>1800)	82% (28)	94% (32)	85% (29)	94% (32)	85% (29)	91% (31)

Source: Author's analysis of data from the Managed Market Surveyor Suite | Pharmacy Benefit Evaluator| Program | January 1, 2022–24 | Managed Market Surveyor Suite |Managed Market Surveyor | Selected Geography(ies) | January 1, © 2022–24 DR/Decision Resources, LLC. All rights reserved.

Notes: The four-firm concentration ratio (CR4) is the sum of the market shares of the four largest firms in a market. For example, the four largest PBMs at the national level in the U.S. have a 75% share of the rebate negotiation market. There are 34 PDP regions in the United States.

Exhibit 5.

The extent of vertical integration between insurers and PBMs

Vertical integration share (%)								
Geographic market	Combined		Commercial		Medicare Part D		MAPDP	SAPDP
	2022	2024	2022	2024	2022	2024	2024	
National level	72	69	69	67	77	73	77	67
PDP region level								
Mean	70	67	65	62	78	75	79	69
Minimum	28	25	11	10	58	50	31	56
Maximum	92	93	94	98	89	86	97	88

Source: Author's analysis of data from the Managed Market Surveyor Suite | Pharmacy Benefit Evaluator | Program | January 1, 2022–24 | Managed Market Surveyor Suite | Managed Market Surveyor | Selected Geography(ies) | January 1,

Notes: The numbers reported represent percentages of prescription drug plan (PDP) lives covered by an insurer that is vertically integrated with a PBM. The combined market is for the combined commercial and Medicare Part D (Medicare Advantage PDP and standalone) lives. The final two columns divide Medicare Part D into MAPDP, which represents Medicare Advantage PDP, and SAPDP, which are standalone PDP lives. The national level share is for the U.S. as a whole. The PDP region-level statistics are for the 34 PDP regions in the U.S., except for Medicare Advantage PDP for which there are 33 PDP regions.

Appendix

There are a few differences in the national-level PBM market shares presented in Exhibit 2 compared to those from Drug Channels. Drug Channels reports the six largest PBMs. The most notable differences are its market shares for Express Scripts and CVS/Caremark differ from those reported found in this study. The market share reported by Drug Channels for Express is 30%, compared to 23% reported here. CVS/Caremark's share in Drug Channels is 27%, compared to 18% in this study.

There are a couple of plausible reasons that might explain such differences. One is that the DRG data exclude drug benefits that are based on direct relationships between self-insured employers and PBMs. If Express Scripts and CVS/Caremark are overrepresented in that carved-out segment, their shares would be smaller in the DRG data than in the Drug Channels data. Second, the shares presented by Drug Channels are based on the *number of prescription claims* managed, whereas the DRG data are based on the *number of drug coverage enrollees*. If there are more claims per covered life among Express Scripts and CVS/Caremark's consumers, that would also make them larger in the Drug Channels than in the DRG data.

There is some suggestive evidence for this. This study finds that some of the insurers whose lives are managed by Express Scripts and CVS/Caremark are much larger in the Medicare standalone PDP market than in the commercial market. For example, Centene, whose lives are managed by Express Scripts, is the largest standalone PDP insurer. Although its share is smaller in Medicare Advantage PDP, it is still the sixth largest Medicare Advantage PDP insurer with a 4% share. Notably, it is one of the largest 10 *commercial* insurers because it is the largest insurer in the exchanges, whose population may be sicker than those with employer sponsored insurance. CVS Health's Aetna uses the CVS/Caremark PBM. Aetna is also overrepresented in standalone PDP with the second largest share of 23%, and it is the third largest in Medicare Advantage PDP with an 11% share. Thus, they may have older and sicker populations of enrollees in the PBM market.

Other notable differences in market shares are for Prime Therapeutics, Kaiser and CarelonRx. This paper finds that Prime Therapeutics, Kaiser and CarelonRx are bigger than in the Drug Channels data. However, Kaiser and CarelonRx, which are the fifth and sixth largest PBMs in this study don't even appear among the six largest PBMs in Drug Channels. Interestingly, Kaiser and CarelonRx's owner—Elevance Health—are among the largest PDP insurers in the U.S.

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