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Location, Location, Location: Spending Differences for Physician-Administered Outpatient Medications by Site-of-Treatment

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AT A GLANCE

Spending differences between hospital outpatient departments (HOPDs) and physician offices (POs) continue to increase spending in employment-based health plans. Physician-administered outpatient drugs (PAODs) — many of which are specialty medications used to treat cancer, autoimmune diseases, and other complex conditions — provide one of the clearest examples of these site-of-treatment reimbursement differences because they can often be administered safely in either setting. HOPDs often receive higher reimbursement than POs for the same physician-administered medications. Previous research has documented substantial reimbursement differences between these sites of care. This *Issue Brief* updates and expands on prior EBRI research using 2023–2024 claims data.

The analysis examines 106 physician-administered outpatient drugs, representing 51 percent of all PAOD claims and 77 percent of total PAOD spending. The study measures differences in reimbursement between HOPDs and POs for the same medications, estimates the potential savings if HOPDs were paid at PO rates, and examines trends in site-of-treatment differences since EBRI's earlier analysis. It also explores who benefits financially from reducing these reimbursement differences and discusses implications for employers, insurers, and policymakers considering site-neutral payment strategies.

Key Findings:

- **Most PAODs are administered in hospital outpatient departments.** Nearly 60 percent of PAODs were administered in HOPDs, compared with 31 percent in POs and 9 percent in other settings, such as a patient's home.
- **Large reimbursement differences persist between HOPDs and POs.** Allowed amounts were higher in HOPDs for all but 13 of the 106 medications examined. On average, HOPDs were paid 102 percent more per unit than POs for the same medication, while the median differential was 64 percent.
- **Site-of-treatment reimbursement represents a potentially significant source of unnecessary spending.** If HOPDs were paid PO rates for the 106 medications examined, employers and workers would collectively save an estimated $9.8 billion annually. Extending these findings to all PAODs suggests potential savings of approximately $12.7 billion per year, or about $101 per covered member annually.
- **Most immediate savings would accrue to employers and insurers.** Because users of PAODs tend to have high overall health care utilization, many may have already satisfied their deductibles or reached their annual out-of-pocket maximums. Consequently, relatively little of the savings from lower site-of-treatment reimbursement would be realized directly by patients at the point of service, although workers could benefit over time through lower health plan costs and premiums.
- **Reimbursement differences remain substantial despite some narrowing.** Median HOPD markups for the original set of PAODs have declined since EBRI's 2021 analysis, due largely to rising PO reimbursement

rather than lower HOPD reimbursement. Even with this narrowing, HOPDs continue to receive substantially higher reimbursement than POs.

These findings suggest that site-of-treatment reimbursement remains an important contributor to unnecessary spending in employment-based health plans. As the use of physician-administered specialty medications continues to grow, employer and health plan strategies such as site-neutral payment, benefit design changes, and directing care to lower-cost settings may offer meaningful opportunities to improve the efficiency of health care spending without changing the underlying treatment patients receive.

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Introduction

Spending differences between hospital outpatient departments (HOPDs) and physician offices (POs) continue to increase spending in employment-based health plans. Physician-administered outpatient drugs (PAODs) — many of which are specialty medications used to treat cancer, autoimmune diseases, and other complex conditions — provide one of the clearest examples of these site-of-treatment reimbursement differences because they can often be administered safely in either setting. HOPDs often receive higher reimbursement than POs for the same physician-administered medications. Previous research has documented substantial reimbursement differences between these sites of care (Cooper et al., 2019; Fronstin, Roebuck, and Stuart, 2020; Fronstin and Roebuck, 2021a; Fronstin and Roebuck, 2021b; and Fronstin and Roebuck, 2023).

Site-of-treatment reimbursement differences contribute to inefficiencies in health care spending. These differences can arise even when the same medication is administered, with reimbursement varying according to where care is delivered. As a result, they represent a potential source of waste in the U.S. health care system. Berwick and Hackbarth (2012) and Shrank, Rogstad, and Parekh (2019) identified pricing failure as one of the largest contributors to unnecessary health care spending, making it an important area for employers, insurers, and policymakers seeking to improve the value of health care spending.

This *Issue Brief* updates EBRI's previous analysis of PAODs (Fronstin and Roebuck, 2021b) using 2023–2024 claims data. The analysis expands the earlier study from 72 to 106 physician-administered outpatient drugs, increasing coverage from 73 percent to 77 percent of total spending on physician-administered drugs covered under the medical benefit. For each medication, this study estimates the difference in reimbursement between HOPDs and POs, calculates the potential savings that could be achieved if HOPDs were paid PO rates, and examines how site-of-treatment reimbursement differences have changed since EBRI's original analysis.

Throughout this *Issue Brief*, reimbursement refers to the allowed amount for a service — that is, the combined amount paid by the health plan and the enrollee after application of contractually negotiated rates. It does not refer to providers' billed charges or manufacturers' drug list prices.

The findings have important implications for employers, insurers, policymakers, and patients. As spending on PAODs continues to increase and care continues to migrate toward HOPDs, understanding the magnitude and persistence of site-of-treatment reimbursement differences has become increasingly important. The following sections review EBRI's previous research on variation in reimbursement across sites of treatment, describe the characteristics of PAODs, discuss the market forces that contribute to site-of-treatment reimbursement differences, and explain why an updated analysis is warranted.

Evolution of EBRI's Site-of-Treatment Research

EBRI's research on reimbursement differences across treatment sites has evolved over the past six years, with each successive study expanding the scope of the analysis while addressing the same fundamental question: To what extent does the location where care is delivered affect spending on clinically comparable services? Collectively, these studies have consistently shown that reimbursement is substantially higher in HOPDs than in POs, resulting in billions of dollars in additional spending for employment-based health plans.

EBRI first examined site-of-treatment reimbursement differences in a study of physician-administered oncology medications (Fronstin, Roebuck, and Stuart, 2020). Growing hospital acquisition of physician practices had shifted an increasing share of chemotherapy infusions from POs to HOPDs, raising concerns that spending differences reflected changes in where care was delivered rather than differences in treatment. Using 2016 claims data, the study compared reimbursement for the 37 highest-spending infused oncology medications. After standardizing for differences in drug mix and treatment intensity, HOPDs were paid 81 percent more than POs for the same medications. Had PO reimbursement rates prevailed in HOPDs, spending would have declined by approximately $9,766 per patient, representing a 45 percent reduction in spending.

Building on those findings, Fronstin and Roebuck (2021a) broadened the analysis beyond oncology medications to determine whether site-of-treatment reimbursement differences extended to other outpatient services. Using 2018 claims data, that study examined 25 commonly used laboratory tests, imaging services, and specialty medications. HOPDs received higher reimbursement than POs or other lower-cost settings for every service examined. Reimbursement differences ranged from 15 percent to 531 percent, with a median difference of 91 percent. Applying PO reimbursement rates to services delivered in HOPDs produced an estimated $11.3 billion in annual savings, including approximately $9.0 billion for employers and insurers and $2.2 billion for workers and their families through decreased cost sharing.

Recognizing the rapidly growing importance of specialty medications covered under the medical benefit, Fronstin and Roebuck (2021b) next focused specifically on physician-administered outpatient drugs. Using 2019 commercial claims data, the study examined the 72 highest-spending physician-administered medications, representing 49 percent of all PAOD claims and 73 percent of total PAOD spending. Nearly three-fifths of these medications were administered in HOPDs, while approximately one-third were administered in POs. Reimbursement was higher in HOPDs for 70 of the 72 medications examined. On average, HOPDs were reimbursed approximately twice as much per unit as POs for the same medication, with a median reimbursement difference of 98 percent. Extending PO reimbursement rates to all PAODs yielded estimated annual savings of $14.1 billion, or approximately $110 per covered member per year.

Most recently, Fronstin and Roebuck (2023) extended the research into the biologic and biosimilar market. Rather than estimating aggregate savings, that study examined whether the growing availability of biosimilars was translating into lower spending and whether site-of-treatment reimbursement differences were limiting those savings. Although biosimilars generally reduced acquisition costs, HOPDs continued to receive substantially higher reimbursement than POs for both innovator biologics and biosimilars. Consequently, a significant portion of the potential savings associated with biosimilar competition was offset by higher reimbursement in hospital outpatient settings.

Taken together, these studies demonstrate that site-of-treatment reimbursement differences are neither isolated nor confined to a particular therapeutic area. Similar reimbursement patterns have been observed across oncology medications, laboratory testing, diagnostic imaging, specialty medications, physician-administered outpatient drugs, and biologic therapies. The consistency of these findings across multiple categories of care suggests that differences in reimbursement across sites of treatment reflect broader structural characteristics of commercial health care markets rather than differences in the services themselves. Collectively, the studies indicate that reducing unnecessary site-of-treatment reimbursement differences represents a substantial opportunity to improve the efficiency of spending in employment-based health plans without altering the clinical care patients receive.

This study builds directly on the body of research on this subject. By expanding the analysis from 72 to 106 PAODs and incorporating 2023–2024 commercial claims data, it provides an updated assessment while extending EBRI's ongoing research into reimbursement variation across sites of care.

Physician-Administered Outpatient Drugs

Prescription drugs covered by employment-based health plans are generally covered through either the pharmacy benefit or the medical benefit. Most prescription medications are dispensed through retail or mail-order pharmacies and covered under the pharmacy benefit. In contrast, PAODs are injectable or infused therapies administered by a health

care professional and are most often covered by the medical benefit. These medications are typically provided in POs; HOPDs; ambulatory infusion centers; or, in some cases, a patient's home.

Although utilization of physician-administered drugs is concentrated in relatively inexpensive generic medications, spending is concentrated in a much smaller group of medications commonly used to treat cancer, autoimmune diseases, inflammatory disorders, multiple sclerosis, rare diseases, and other serious chronic conditions. Many require specialized handling, storage, administration, or clinical monitoring and often represent the standard of care for patients with complex medical conditions.

Employers have traditionally relied on benefit design and utilization-management strategies to manage prescription drug spending. Deductibles, copayments, coinsurance, specialty drug tiers, prior authorization, step therapy, quantity limits, and formulary management can influence the use of many retail prescription drugs by encouraging lower-cost therapeutic alternatives or discouraging unnecessary utilization. These approaches may have less influence on utilization of physician-administered specialty medications for which clinically appropriate alternatives may be limited.

Unlike many retail prescriptions, physician-administered specialty medications are typically prescribed for serious or life-threatening conditions for which few clinically appropriate alternatives exist. Moreover, individuals receiving these therapies tend to be among the highest users of health care services. Consequently, many satisfy their annual deductibles and out-of-pocket maximums early in the benefit year. As shown later in this paper, relatively few claims for PAODs involve deductible, coinsurance, or copayment payments by patients. Once patients reach their annual out-of-pocket maximum, the financial incentive to seek care in a lower-cost setting is substantially reduced.

For employers and insurers, however, the site where physician-administered drugs are delivered remains an important determinant of spending. Because many of these medications can be administered safely in multiple outpatient settings, differences in reimbursement between HOPDs and POs can translate directly into higher health plan expenditures without changing the medication administered or the clinical care received. Consequently, understanding how reimbursement varies across sites of care has become an increasingly important component of strategies to improve the efficiency of spending on specialty medications.

The remainder of this paper focuses on PAODs covered by the medical benefit. Although specialty medications administered through the pharmacy benefit are also commonly used to treat complex and serious conditions, the market dynamics governing those products differ substantially because reimbursement is negotiated through pharmacy benefit managers and pharmacy networks rather than through medical claims submitted by hospitals and physician practices.

Why Site of Treatment Matters

Although PAODs are clinically distinct from most retail prescription medications, the larger policy question is not the drugs themselves but the reimbursement for administering them. Understanding why reimbursement differs across sites of care is therefore central to understanding the spending differences documented in this paper.

Earlier research found that approximately 94 percent of chemotherapy infusions were administered in POs in 2004, but that share had fallen to 57 percent by 2014 (Winn et al., 2018). More recent evidence indicates that this migration has continued, with HOPDs accounting for a majority of chemotherapy infusions among individuals with employment-based coverage by 2020 (Chang and Sen, 2023). The migration of care from POs to HOPDs has occurred alongside increased hospital acquisition of physician practices. When a hospital acquires a physician practice, services that previously were provided and billed as physician-office services may subsequently be classified and billed as hospital outpatient services, sometimes without a change in the physical location where patients receive care. Thus, the shift toward HOPDs reflects, at least in part, changes in provider ownership and organizational structure rather than simply patients choosing to receive care in different settings.

Financial incentives may also contribute to this shift. Services delivered through HOPDs generally receive higher reimbursement than the same services delivered in independent POs. Hospital systems may also have greater negotiating leverage with commercial insurers than independent physician practices because of provider consolidation and market concentration (Cooper et al., 2019). In addition, services delivered in HOPDs may include facility payments that are unavailable in POs, further increasing total reimbursement. For PAODs, participation in the federal 340B Drug Pricing Program may provide an additional financial incentive for eligible hospitals to acquire physician practices and administer drugs in hospital-affiliated settings, because eligible hospitals can purchase certain outpatient drugs at discounted prices while receiving reimbursement based on negotiated commercial payment rates (Desai and McWilliams, 2018). Although the relative importance of these factors varies across markets and services, together they may contribute both to the migration of care toward HOPDs and to the substantial reimbursement differences observed between HOPDs and POs.

The financial implications of these differences extend beyond individual episodes of care. Previous EBRI research has demonstrated that these reimbursement differences exist across oncology medications, laboratory testing, diagnostic imaging, specialty medications, physician-administered outpatient drugs, and biologic therapies (Fronstin, Roebuck, and Stuart, 2020; Fronstin and Roebuck, 2021a; Fronstin and Roebuck, 2021b; and Fronstin and Roebuck, 2023).

Several recent trends further increase the importance of understanding variation in reimbursement across sites of treatment. Reimbursement in HOPDs continues to rise faster than reimbursement in lower-cost settings. Blue Health Intelligence (2023) found that reimbursement for common outpatient procedures increased 27 percent in HOPDs between 2017 and 2022, compared with only 2 percent in POs over the same period. Continued consolidation among hospitals and physician practices has increased the likelihood that clinically comparable services will be delivered in higher-cost hospital outpatient settings.

The consistency of these findings suggests that site-of-treatment reimbursement differences reflect broader characteristics of commercial payment systems rather than isolated differences in specific therapeutic areas. Taken together, these trends suggest that the financial consequences of reimbursement variation across sites of treatment are likely to become increasingly important for employment-based health plans. Understanding the magnitude of these reimbursement differences-and the potential savings that could be achieved through site-neutral payment policies or other approaches that reduce reimbursement disparities has become an important consideration for employers, insurers, and policymakers seeking to improve the efficiency of health care spending while preserving access to high-quality care.

The following sections describe the data and methods used to quantify site-of-treatment reimbursement differences for PAODs and estimate the potential savings associated with reducing those differences.

Data and Analytic Methods

Data Source

This study uses the Merative™ MarketScan® Commercial Database. The database contains member enrollment information as well as adjudicated inpatient and outpatient medical and pharmacy claims. Because the database contains actual adjudicated claims, it provides an appropriate source for comparing reimbursement across sites of care.

We constructed an analytical dataset of adults (ages 18–64) who were continuously enrolled in employment-based health plans in 2023 and 2024. Members in capitated plans were excluded. A total of 10.9 million individuals met these criteria in 2024, and 9.6 million did so in 2023. Sample averages for the following characteristics are reported in Figure 1: gender, age, relationship to policyholder, and plan type.

Figure 1
Sample Characteristics, 2024

Gender	
Male	49%
Female	51%
Age, Years	41.8
18–24	14%
25–34	19%
35–44	22%
45–54	22%
55–64	22%
Person Covered	
Policyholder	65%
Spouse	22%
Child/other dependent	13%
Type of Health Plan	
HMO/EPO	17%
PPO/POS	58%
HRA	9%
HSA-eligible health plan	15%

Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

Note: HMO=health maintenance organization; EPO=exclusive provider organization; PPO=preferred provider organization; POS=point of service; HRA=health reimbursement arrangement; HSA=health savings account.

Study Sample

PAODs were identified using Healthcare Common Procedure Coding System (HCPCS) codes in the "J," "Q," and "S" ranges. The analysis focuses on the 106 highest-spending PAODs observed during the study period. Collectively, these medications accounted for approximately 51 percent of all PAOD claims and 77 percent of total spending on physician-administered drugs covered under the medical benefit.

Limiting the analysis to the highest-spending medications captures the overwhelming majority of PAOD spending while avoiding unstable estimates associated with drugs that have very low utilization or limited claim volume. Because spending on PAODs is highly concentrated, this approach provides a broad assessment of reimbursement differences while maintaining stable estimates for individual medications.

HOPDs and POs were identified using the place-of-service and provider information contained in the MarketScan claims data. Only claims with complete payment and utilization information were included in the analysis.

Study Measures

The primary objective of the analysis is to compare reimbursement for the same physician-administered medication when administered in HOPDs vs. POs.

For each medication, average reimbursement per unit was calculated separately for HOPDs and POs. Reimbursement was measured using the allowed amount — the combined amount paid by the health plan and the enrollee. Measuring reimbursement on a per-unit basis isolates differences attributable to negotiated payment rates rather than differences in dosage, treatment duration, or patterns of utilization.

The analysis also examines the distribution of patient cost sharing, — including deductibles, copayments, and coinsurance — to evaluate the extent to which workers directly benefit from lower site-of-treatment reimbursement.

More information about the analytic framework can be found in the appendix.

Trend Analysis

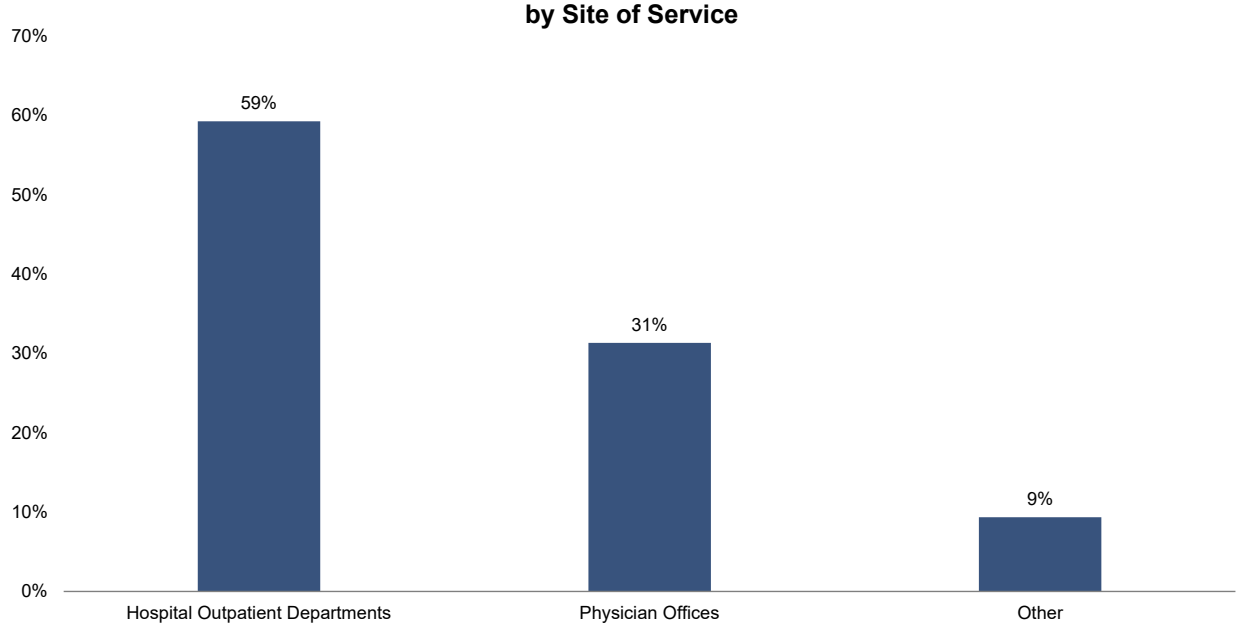
To assess how site-of-treatment reimbursement differences have changed over time, we reapplied the original set of 72 PAODs examined in our 2021 analysis of physician-administered outpatient drugs to commercial claims for each available year from 2019 through 2024. Two of the original medications were excluded because no claims were observed during the 2023–2024 period, leaving 70 medications defined consistently across years. For each year, per-unit HOPD and PO reimbursement and the resulting HOPD markup were calculated using the same methodology applied to the 106-drug analysis. Because each markup is expressed as the ratio of HOPD to PO per-unit reimbursement, it is unaffected by overall growth in reimbursement levels, so year-to-year changes reflect movements in relative site-of-treatment reimbursement rather than overall growth in health care costs. We report the median HOPD markup by year and, among the 20 medications with the highest HOPD spending in 2024, the change in average PO reimbursement between 2019 and 2024.

Results

Where Are Physician-Administered Outpatient Drugs Administered?

HOPDs are the predominant site of care for physician-administered outpatient drugs. As shown in Figure 2, 59 percent of all administrations occurred in HOPDs, compared with 31 percent in POs and 9 percent in other settings, most commonly patients' homes. Although HOPDs account for most physician-administered outpatient drug use overall, the distribution varies considerably across individual medications. Yet, because the combination of HOPDs and POs account for the majority of utilization, differences in reimbursement between HOPDs and POs have important implications for overall health care spending.

Figure 2
Distribution of Various Physician-Administered Outpatient Drugs, by Site of Service



Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

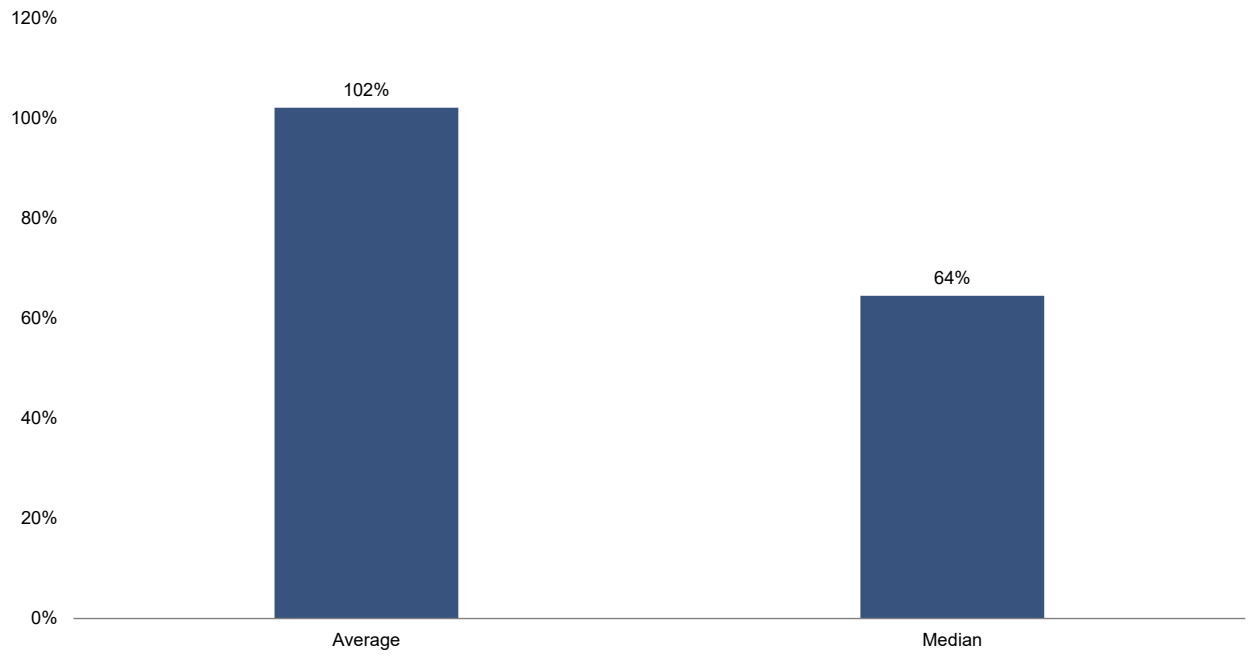
How Large Are Site-of-Treatment Reimbursement Differences?

Substantial reimbursement differences persist between HOPDs and POs. Allowed amounts were higher in HOPDs for 93 of the 106 PAODs examined, while the median annual reimbursement difference across all medications examined was $5,531 per patient and reached $135,306 for one oncology medication.

When reimbursement was measured on a per-unit basis, HOPDs were paid an average of 102 percent more than POs for the same medication (Figure 3). The median markup was 64 percent, indicating that the typical HOPD received nearly two-thirds more than a PO for administering the same drug. Because relatively few medications were administered outside of HOPDs and POs, reimbursement differences involving other treatment settings were not examined.

These findings indicate that substantial site-of-treatment reimbursement differences remain common across PAODs despite growing attention from employers, insurers, and policymakers.

Figure 3
Average and Median Percentage Price Differential per Unit Based on 106 Physician-Administered Outpatient Drugs



Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

How Much Could Employers and Workers Save?

The observed reimbursement differences translate into substantial potential savings. If HOPDs had been paid PO rates for the 106 PAODs included in this study, employers and workers would have collectively saved an estimated $9.8 billion annually (Figure 4).

Extending these findings to all PAODs covered under the medical benefit increases the estimated annual savings to approximately $12.7 billion. Spread across all adults covered by employment-based health plans, these savings equal approximately $77 per member per year for the 106 drugs studied and approximately $101 per member per year when extrapolated to all physician-administered outpatient drugs. Overall, eliminating site-of-treatment reimbursement differences for PAODs would reduce total health care spending for workers and their dependents by approximately 1 percent.

Figure 4
Estimated Savings

Top 106 Physician-Administered Outpatient Drugs (PAODs)	$9.8 billion
All Physician-Administered Outpatient Drugs	$12.7 billion
Potential Savings from HOPD Markup of 106 PAODs (per member, per year)	$77.40
Percent of Aggregate Spending	0.8%
Porential Savings from HOPD Markup of All PAODs (per member, per year)	$101.05
Percentage of Aggregate Spending	1.0%

Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

Who Benefits From Lower Site-of-Treatment Reimbursement?

Although reducing site-of-treatment reimbursement differences would lower overall health care spending, most of the immediate financial benefit would accrue to employers and health plans rather than to patients at the point of service.

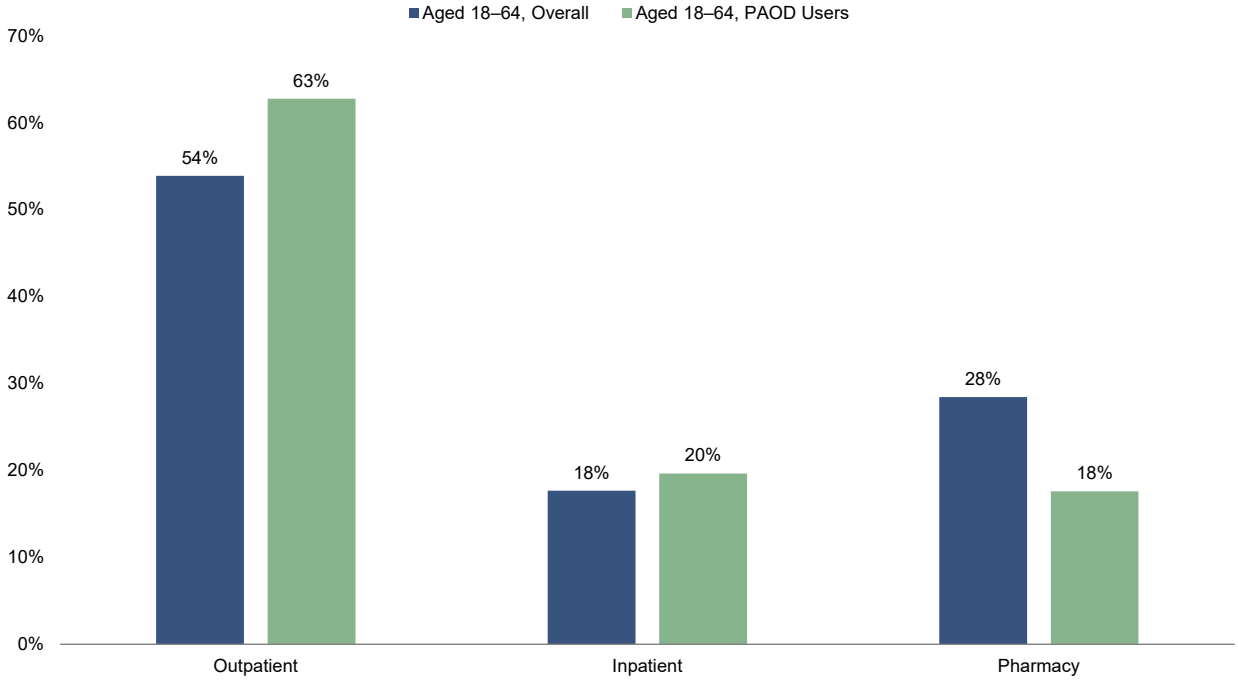
Among claims for the 106 PAODs examined in this study, 90 percent had no deductible payment, 80 percent had no coinsurance, and 97 percent had no copayment. Overall, deductibles accounted for only 1.1 percent of total spending, while coinsurance represented just 1.7 percent. Consequently, reducing reimbursement differences between HOPDs and POs would initially reduce employer and insurer expenditures much more than patient out-of-pocket costs.

This finding reflects the characteristics of individuals who receive physician-administered specialty medications. These patients are disproportionately high users of health care services and frequently satisfy both their annual deductibles and maximum out-of-pocket limits early in the benefit year. Previous EBRI research found that 10 percent of the population accounted for 70 percent of health care spending and that, among this group, 50–60 percent reached both their deductible and maximum out-of-pocket limit (Fronstin and Roebuck, 2019). Once these limits have been reached, additional health care services are subject to little or no patient cost sharing. As a result, reductions in reimbursement for PAODs would primarily lower amounts paid by employers and health plans rather than patients at the point of service.

Although users of PAODs spent more on prescription medications than the average enrollee, prescription drugs represented a smaller share of their total health care spending because of their extensive use of other medical services. Pharmacy spending accounted for 28 percent of total health care spending among all adults in the sample, compared with only 18 percent among physician-administered outpatient drug users (Figure 5). Similarly, prescription drugs represented 20 percent of total out-of-pocket spending among all adults but only 14 percent among physician-administered outpatient drug users (Figure 6).

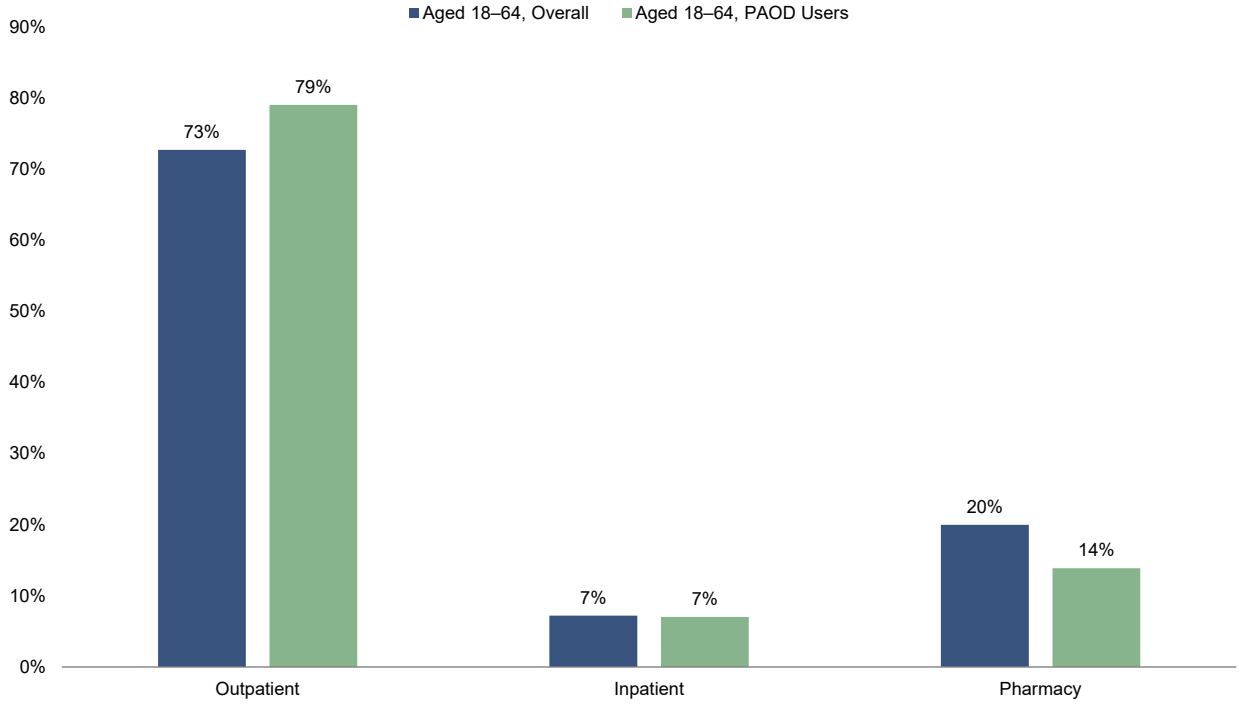
Over time, however, workers and their families would be expected to benefit indirectly from lower site-of-treatment reimbursement through slower growth in health plan spending and, ultimately, lower health insurance premiums.

Figure 5
Distribution of Health Care Spending, 2024



Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

Figure 6
Distribution of Out-of-Pocket Health Care Spending, 2024



Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

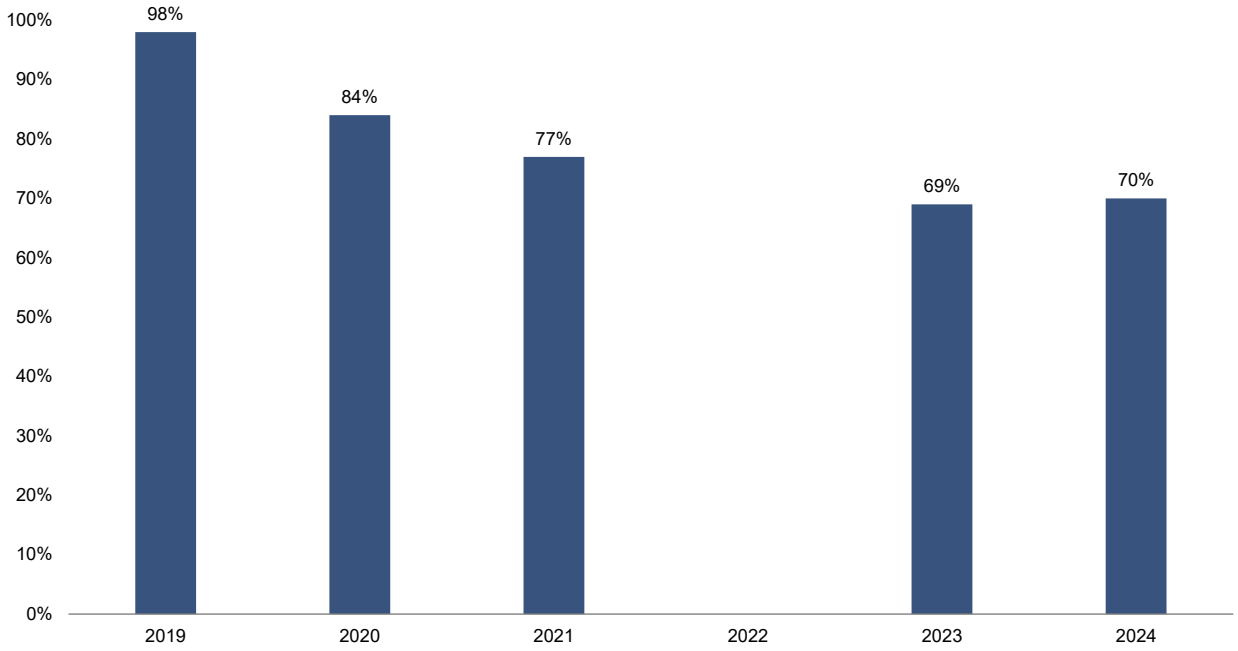
Have Site-of-Treatment Reimbursement Differences Changed?

Although site-of-treatment reimbursement differences remain substantial, they have narrowed somewhat since EBRI's original analysis of physician-administered outpatient drugs.

Using the original set of 72 medications examined in (Fronstin and Roebuck 2021b), the median HOPD markup declined from 98 percent in 2019 to 70 percent in 2024 (Figure 7). Two of the original medications were excluded because no claims were observed during the study period.

The narrowing of the reimbursement difference does not primarily reflect lower HOPD reimbursement. Instead, much of the change appears to result from rising reimbursement in POs. Among the 20 medications with the highest HOPD spending in 2024, PO reimbursement increased by approximately 17 percent between 2019 and 2024. Despite this narrowing, HOPDs continue to be paid substantially more than POs for most physician-administered outpatient drugs, indicating that site-of-treatment reimbursement differences remain an important source of excess spending in employment-based health plans.

Figure 7
Median Drug-Level Markup, 2019–2024



Source: EBRI analysis of Merative™ MarketScan® Commercial Database.

Conclusion and Implications

This study updates and expands EBRI's previous analysis of PAODs using 2023–2024 commercial claims data. The findings demonstrate substantial reimbursement differences between HOPDs and POs. HOPDs were paid more than POs for nearly nine out of every 10 PAODs examined, and those differences translate into an estimated $12.7 billion in additional annual spending for employment-based health plans.

One of the study's more important findings is that most of the immediate financial benefit from reducing site-of-treatment reimbursement differences would accrue to employers and health plans rather than directly to patients. Individuals receiving physician-administered specialty medications are disproportionately high users of health care services and frequently satisfy their annual deductibles and maximum out-of-pocket limits early in the plan year. Consequently, reducing reimbursement differences has relatively little effect on point-of-service cost sharing for these

patients. Instead, workers and their families would be expected to benefit indirectly over time through slower growth in health plan costs and health insurance premiums.

For employers and insurers, these findings reinforce the importance of examining where physician-administered specialty medications are delivered in addition to which medications are prescribed. Contracting strategies, site-of-care programs, network design, and reimbursement policies that reduce unnecessary site-of-treatment reimbursement differences may represent meaningful opportunities to improve the efficiency of health care spending. At the same time, hospital acquisitions of POs may limit the negotiating leverage available to many purchasers, making market-based approaches more difficult to implement in some regions.

The findings also have implications for policymakers. The estimates presented in this *Issue Brief* suggest that a meaningful portion of spending on PAODs is attributable to reimbursement differences across sites of care rather than differences in the medications administered or the clinical services provided. These findings contribute to the growing body of evidence supporting efforts to reduce unwarranted payment variation while preserving access to clinically appropriate care. Policymakers have increasingly examined site-neutral payment and related approaches to reduce reimbursement differences across sites of care, largely in the context of public programs. The differences documented here, however, may be even more pronounced in commercial markets, where comparable site-neutral approaches remain far less common. Importantly, the analysis does not assume that all care can or should be shifted from HOPDs to POs. Rather, it estimates the portion of spending attributable solely to reimbursement differences for clinically comparable services.

Finally, the findings underscore the broader role of site-of-treatment reimbursement differences as a source of spending variation in commercial health care markets. Across a series of EBRI studies spanning oncology medications, laboratory services, diagnostic imaging, biologics and biosimilars, and physician-administered outpatient drugs, HOPDs have consistently received substantially higher reimbursement than POs for clinically comparable care. Although the magnitude of these reimbursement differences varies across services, the pattern has remained remarkably consistent.

Addressing unnecessary site-of-treatment reimbursement differences for physician-administered specialty medications represents an opportunity to improve the efficiency of health care spending without changing the medications patients receive or compromising access to high-quality care. Whether pursued through payment reform, contracting strategies, network design, or other approaches, reducing unwarranted reimbursement differences across sites of care has the potential to generate meaningful savings, provided that approaches to reducing reimbursement differences preserve access to clinically appropriate, high-quality care.

Appendix — Analytical Framework

The objective of the analytical framework is to estimate the portion of spending attributable solely to differences in reimbursement between HOPDs and POs. Rather than assuming that care shifts from one setting to another, the analysis asks a simpler question:

> How much spending would have been reduced if PO reimbursement rates had applied to the same units of physician-administered drugs delivered in HOPDs?

Potential savings were therefore estimated by replacing the observed HOPD reimbursement for each medication with the corresponding average PO reimbursement while holding utilization constant. This approach isolates the effect of site-of-treatment reimbursement variation without assuming changes in patient mix, clinical practice, or utilization.

For each of the 106 medications (indexed by d), by place of service (denoted by *HOPD*, *PO,* and *OTHER*), we measured:

- Total number of members (N=10.9) in the sample.
- Total number of patients for each drug (P_d).

- Average number of claims per patient for each drug (X_d).
- Average annual total cost ($COST_d$) (i.e., allowed amount) per patient for each drug — as well as the member and plan-cost components.
- This allowed for the derivation of the market share enjoyed by HOPDs at the drug-level:

$$MARKET\ SHARE_d^{HOPD} = \frac{(P_d{}^{HOPD} X_d{}^{HOPD})}{(P_d{}^{HOPD} X_d{}^{HOPD}) + (P_d{}^{PO} X_d{}^{PO}) + (P_d{}^{OTHER} X_d{}^{OTHER})}$$

  As well as, in aggregate:

$$MARKET\ SHARE^{HOPD} = \frac{\sum_{d=1}^{106}[(P_d{}^{HOPD} X_d{}^{HOPD})]}{\sum_{d=1}^{106}[(P_d{}^{HOPD} X_d{}^{HOPD}) + (P_d{}^{PO} X_d{}^{PO}) + (P_d{}^{OTHER} X_d{}^{OTHER})]}$$

- Prevalence in the HOPD setting was also calculated for each drug:

$$PREVALENCE_d^{HOPD} = \frac{P_d^{HOPD}}{N}$$

The next step in the analytical process was to determine the per-unit reimbursement difference between HOPDs and POs, for each medication and in aggregate. This required cleansing the data of claims with suspect "units" field values. Based on our prior work, we removed the following types of claims:

- Those where units<=1 or were missing.
- Those with payment amounts <$0.01.
- Those where payment amounts were missing.
- Those where claims were marked as capitated.

We deleted claims with units=1 because it would have been impossible to determine whether these claims involved National Drug Code (NDC)-based billing (vs. HCPCS unit-based). Claims for four drugs where units=1 was the only plausible value (because all NDCs had the same dosage/strength as the HCPCS unit) were retained. Finally, as in our previous analyses, we trimmed tails at the 1st and 99th percentiles of the (drug-specific) units' distributions to reduce the influence of outliers that likely represented data entry errors.

Using the remaining (cleaned) data, for each claim, we divided the cost by the number of units. We subsequently calculated the average cost per unit by drug and place of service, namely:

$$U_d^{HOPD} \text{ and } U_d^{PO}$$

Therefore, drug-specific HOPD markups (i.e., reimbursement differences) were calculated as:

$$MARKUP_d^{HOPD} = 1 - (\frac{U_d^{HOPD}}{U_d^{PO}})$$

We reported the average and median HOPD markup across the 106 drugs.

In the last stage of the analysis, we estimated the potential savings that could be realized if PO reimbursement rates prevailed in the HOPD setting. To do so, using the drug prevalence rates measured in our sample, we first extrapolated the number of HOPD patients for each drug that would be expected in the U.S. population of adults, using an estimate of 126.1 million adults with employment-based health plans.[1]

$$\widehat{P_d^{HOPD}} = PREVALENCE_d^{HOPD} \bullet 126.1\,million$$

Next, we derived the potential per-patient per-year (PPPY) savings for each drug, assuming that the observed average annual HOPD cost reflected the estimated HOPD markup. In other words, we calculated the difference between the actual average annual HOPD cost and the counterfactual (under PO reimbursement rates) average annual HOPD cost. This method holds treatment intensity constant in the HOPD setting. Specifically,

$$PPPY\ SAVINGS_d = COST_d^{HOPD} - \frac{COST_d^{HOPD}}{1 + MARKUP_d^{HOPD}}$$

We then calculated the total potential savings as the product of the expected number of HOPD patients in the population for each drug and the potential PPPY savings:

$$TOTAL\ SAVINGS_d = \widehat{P_d^{HOPD}} \bullet PPPY\ SAVINGS_d$$

Summing across all 106 drugs yields the aggregate potential savings in dollars.

$$AGGREGATE\ SAVINGS = \sum_{d=1}^{106} TOTAL\ SAVINGS_d$$

Dividing the aggregate savings by the estimated 126.1 million adults with employment-based health benefits gives the per-member per-year (PMPY) potential savings — that is, the savings spread across all plan enrollees.

$$PMPY\ SAVINGS = \frac{AGGREGATE\ SAVINGS}{126.1\,million}$$

We also present alternative estimates that scale up to represent 100 percent of PAODs. This step assumes that the drugs not studied (i.e., the remaining 23 percent of PAOD expenditures) would have the same average HOPD markup as the 106 drugs analyzed (i.e., 77 percent of PAOD expenditures). Also presented is the aggregate HOPD markup — which is essentially the expenditure-weighted average of drug-specific HOPD markups — derived as aggregate savings divided by the aggregated counterfactual HOPD cost.

$$AGGREGATE\ HOPD\ MARKUP = \sum_{d=1}^{106} TOTAL\ SAVINGS_d \Big/ \sum_{d=1}^{106} \widehat{P_d^{HOPD}} \bullet \frac{COST_d^{HOPD}}{1 + MARKUP_d^{HOPD}}$$

Finally, we conclude by calculating the percentage of total health care spending that the aggregate potential savings would represent.

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Endnotes

[1] Author estimates from the 2025 Annual Social and Economic Supplement to the Current Population Survey.