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Understanding How the Pharmaceutical Distribution and Payment System Shapes the Prices of Brand Medicines

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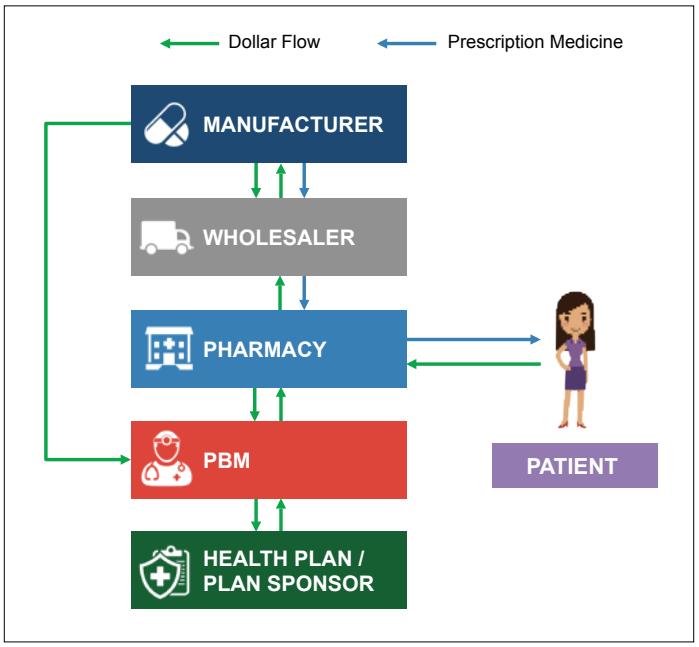
Introduction

Over the past year, increased media and policymaker focus on the price of medicines has led to anger and frustration targeted at pharmaceutical manufacturers, pharmacy benefit managers (PBMs), and health plans. Drug pricing is a complex and often confusing issue, shaped by a pharmaceutical distribution and payment system that involves multiple transactions among numerous stakeholders. A better understanding of the players involved in the pharmaceutical supply chain, and the role each plays in determining what patients utlimately pay for their prescription medicines, can help consumers and policymakers find answers to their questions and concerns about cost and access to medicines.

While there has been significant public discussion about the prices of prescription medicines, it is rarely clear what price is being discussed. As this paper shows, there is no one price for a medicine, as prices paid by wholesalers, pharmacies, PBMs, and health plan sponsors all vary and are determined by negotiations between stakeholders, each with varying degrees of negotiating power. For example, large PBMs that negotiate on behalf of health plan sponsors and manage benefits for covering tens of millions of patients are able to leverage their market power to obtain substantial discounts and rebates on brand medicines.

In 2015, more than one-third of a brand medicine's list price was rebated back to health plans or the government or kept by other stakeholders.

As the supply chain has consolidated and competition among brand medicines has intensified over the past 5 to 10 years, privately negotiated rebates and discounts on brand medicines have also risen sharply. In 2015, more than one-third of a brand medicine's list price was rebated back to health plans or the government or kept by other stakeholders.[1] Continued growth in rebates and discounts—which



now exceed $100 billion each year[1]—has kept payers' prices for brand medicines climbing at modest rates, despite more rapid growth in publicly reported list prices.

After accounting for all discounts, prices for brand medicines have grown at or more slowly than historical rates, yet many patients have experienced rapidly increasing out-of-pocket costs. Over the past 10 years, patient cost-sharing has risen substantially faster than health plan costs. For workers with employer-sponsored health insurance, out-of-pocket spending for deductible and coinsurance payments increased by 230% and 89%, respectively, compared to a 56% increase in payments by health plans.[2]

One reason that it seems as if the costs of medicines are going up dramatically is because discounts and rebates provided by brand manufacturers do not flow directly to the patients taking the medicine. Large deductibles and prescriptions that require coinsurance pose particular challenges, as these types of cost-sharing are typically based on a medicine's full, undiscounted price. In 2015, cost-sharing for nearly one-fifth of brand medications filled in the

commercial market was based on the undiscounted list price, accounting for more than half of patient out-of-pocket spending on brand medicines.[3]

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In most cases, negotiated savings flow back to employers and health plans, and rebates are used to reduce premiums. But in recent years, plan sponsors have raised doubts about this process and whether incentives are appropriately aligned across all stakeholders. Although PBMs say they prefer lower list prices, as this paper shows, in many cases, the system creates incentives for PBMs to prefer medicines with higher list prices and higher rebates. As a result, some industry observers and government agencies have questioned whether insurers and PBMs are more focused on the size of rebates than on achieving the lowest possible costs and best outcomes for patients.[3]

The financial arrangements among stakeholders purchasing brand medicines have evolved significantly in the last decade. Transformation has been driven both by growing market consolidation and integration of the roles of PBMs, pharmacies, and wholesalers and by the need to meet new challenges related to storage, handling, administration, and insurance requirements for new medicines. As the system has evolved, the variety and level of administrative and service fees charged by supply chain entities have also increased.

This paper provides a high-level explanation of the financial flows that occur as brand medicines move through the supply chain for retail, mail-order, and specialty drugs. Information on the discounts, rebates, and fees privately negotiated between stakeholders was gathered from a combination of published materials and key informant interviews with industry experts. Because the vast majority of prescriptions are reimbursed under an insurer's pharmacy benefit, we focus on the distribution and financial arrangements for these medicines. The distribution and payment system for generic medicines varies significantly from those for brand medicines and is beyond the scope of this paper.

To help demonstrate the way the system works, we provide several illustrative examples of the financial flows that occur as medicines move along the supply chain. Because payment terms are determined through confidential, private negotiations, the terms of individual contracts are highly variable and may differ from the hypothetical examples presented here.

From the Factory to the Pharmacy

Before a patient can go to the pharmacy (or mailbox) to pick up their prescription, the medicine must make its way from the pharmaceutical manufacturer to the pharmacy.

Each year, nearly 6 billion prescriptions are filled in the United States (US), of which nearly 500 million are for brand medicines.[4] To deliver medicines efficiently to 60,000 pharmacies across the country, manufacturers contract with ***wholesale distributors (wholesalers)***.

- **Wholesale distributors (wholesalers)** take physical possession of prescription medicines once they have been shipped from the manufacturer.
- Wholesalers typically earn a distribution service fee based on a percentage of a medicine's purchase price.
- The wholesaler market is highly consolidated. The 3 largest pharmaceutical wholesalers—McKesson, AmerisourceBergen, and Cardinal Health—account for an estimated 85% to 90% of the market.[5]

Wholesalers serve as the connection between manufacturers and pharmacies. They typically purchase medicines from manufacturers at a price known as the wholesale acquisition cost (WAC). This price is the "list price" of a brand medicine. WAC is the price manufacturers charge to wholesalers or other direct purchasers before any discounts, rebates, or other price reductions are applied.

In return for a wholesaler's distribution services, manufacturers pay wholesalers a distribution service fee. This fee is commonly based on a percentage of the list price (WAC) and is provided in exchange for financial management, inventory management, distribution service, and data processing. Contracts between manufacturers and wholesalers may also include bulk-purchasing discounts and discounts for prompt payment. In total, these fees, discounts, and rebates are negotiated individually between manufacturers and wholesalers and can vary as a percentage of WAC.

Retail and mail-order pharmacies contract with wholesalers to stock their pharmacies with prescription medicines. Pharmacies typically purchase medicines from the wholesaler at a contracted discount off the WAC, and this rate can and does vary based on the size and purchasing power of the pharmacy. Contracts between wholesalers and pharmacies facilitate timely and full payment for product purchases and require pharmacies to meet other contractual obligations in exchange for this discount.

There is no standard definition for "specialty medicines." Many stakeholders define specialty medicines as those that:

- Involve complex treatment regimens, monitoring of side effects, assistance with medication administration, frequent dosing adjustments, and patient follow-up
- Involve special handling (eg, cold chain)
- Are biologics and are delivered to the patient via injection or infusion
- Target chronic or rare diseases with smaller patient populations than traditional medicines
- Exceed a certain price threshold (eg, Medicare Part D defines specialty-tier drugs as costing $670 or more per month)

The distribution and payment flow for ***specialty medicines*** in the outpatient setting can vary from the process described above, as these medicines are often not stocked at retail pharmacies. Instead, because some medicines have special requirements for storage and handling or because utilization needs to be closely managed, patients are more likely to receive specialty medicines from ***specialty pharmacy providers (SPPs)***.

SPPs, which almost exclusively manage specialty medicines, began to play a much larger role in the distribution system over the past decade. Payers often set up a network of SPPs to provide specialty medicines to patients and require them to fill prescriptions at participating SPPs.

Manufacturers may also limit their product's distribution to select SPP network participants for several reasons, such as when only a small population of patients uses a particular medicine (making distribution across broad networks difficult, given the limited supply) or when additional safety monitoring is required by the Food and Drug Administration (FDA) (eg, a Risk Evaluation and Mitigation Strategy [REMS]).[6]

Like retail pharmacies, SPPs typically purchase specialty medicines from wholesalers at a discounted rate off the list price and may be required to pay network access and other fees to PBMs. SPPs also typically charge manufacturers data-processing and administrative fees.

Today, the largest SPPs are owned or affiliated with a PBM, as shown in ***Table 1***.

Table 1. Top Specialty Pharmacies in the US in 2016[7]

Specialty Pharmacy Name	Parent Organization	Share of US Specialty Revenues
CVS Specialty	CVS Health (PBM)	28%
Accredo	Express Scripts (PBM)	19%
AllianceRx Walgreens Prime	Walgreens Boots Alliance/Prime Therapeutics (PBM)	13%
BriovaRx	Optum Rx (PBM)	7%
Diplomat Pharmacy	Diplomat Pharmacy	4%
	TOTAL	**71%**

Who Pays Pharmacies?

To receive compensation for the prescriptions they dispense, pharmacies submit claims to PBMs and are reimbursed based on a negotiated rate. Although the terms of these private negotiations vary, the basis for these negotiations is typically not the WAC, but the average wholesale price (AWP). The AWP is often used as the basis for these negotiations because the underlying data are continuously updated and publicly available.[a]

The pharmacy reimbursement rate is usually a discount from AWP plus a dispensing fee minus any patient cost-sharing collected by the pharmacy.

[a] As typically calculated for brand medicines, the AWP is 20% higher than the WAC.

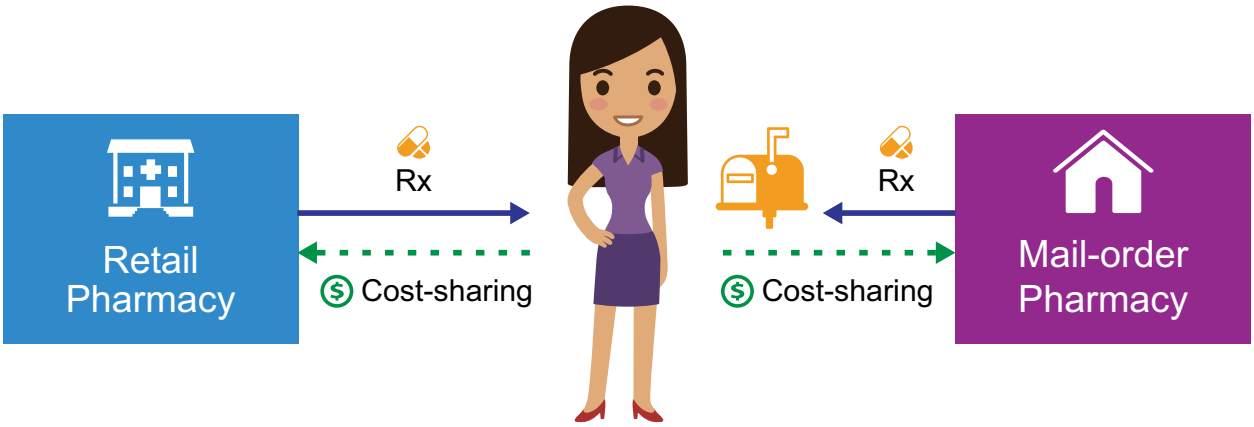
Patient Experience: Understanding Out-of-Pocket Costs

How much a patient pays for a prescription is determined by their insurance coverage. When a patient drops off their prescription, the pharmacy contacts a patient's health plan to obtain certain information on the patient's pharmacy benefits, such as whether the medicine is covered by their plan and what their share of the cost will be. The cost-sharing amount paid to the pharmacy can be any one of the following:

Full, undiscounted price of the medicine, if they haven't met their deductible (ie, a set amount the patient must pay out of pocket each year before their insurance begins paying for their care)[b]

Copayment: A fixed dollar amount for each prescription

Coinsurance: A percentage of the medicine's full, undiscounted price (eg, 20%); in some cases, coinsurance may be capped at a certain amount (eg, $200)



Health plans usually outsource the management of outpatient pharmacy benefits to ***PBMs***, which use a variety of tools to manage drug spending for their health plan clients.

The flow of rebates and discounts is different for prescription medicines than for medical services. Physician and hospital visits, lab tests, and other services are typically billed to patients at prices negotiated between the health plan and provider, as spelled out in the patient's explanation of benefits. The patient thus sees the benefit of that negotiation as soon as they receive their bill.

- **PBMs** contract with manufacturers to **negotiate discounts and rebates** that can benefit their clients. They also negotiate network and administrative fees with pharmacies.
- PBMs offer a range of administrative (eg, enrollment, marketing), clinical (eg, pharmacy and therapeutics committee, appeals support), and other business services to their customers.
- The 3 largest PBMs are estimated to manage prescription drug benefits for about 70% of the market.[8]

[b] Patients without insurance also face the full undiscounted price of the medicine.

For medicines, savings negotiated between manufacturers and PBMs are generally not shared with patients at the time that they fill a prescription. Plan sponsors often use the rebates and discounts they receive to help reduce plan costs or premiums, though they are not required to do so (except in Medicare Part D). That means patients whose cost-sharing is tied to the price of a medicine (ie, patients with coinsurance and those who fill a prescription before meeting their deductible) are typically charged based on the undiscounted list price, even though the PBM may have negotiated a rebate with the manufacturer that significantly lowered the medicine's final net price.

Sometimes a patient's cost-sharing amount may exceed the price the health plan actually pays for a medicine or exceed what the patient would pay at the pharmacy counter without using insurance (ie, by paying in cash). Language in PBM contracts may discourage or prohibit pharmacists from informing insured patients about the lower cash price, at the risk of the pharmacy being excluded from the PBM's network.[9,10]

The Financial Back-end: Understanding Discounts and Rebates

Once a patient receives a medication, the physical journey of that medicine through the pharmaceutical distribution system is complete. The funding flow, however, is not. The funding mechanisms described so far—including payments based on WAC or AWP and cost-sharing payments made by patients—can be said to occur upfront, in the sense that the payment amount is known at the time that the medication is purchased. On the back-end, negotiated rebates, which are typically applied retroactively, after the patient has taken possession of the medication, play a larger role.

Similar to the role of wholesalers in facilitating the distribution of medicines from manufacturers to pharmacies, PBMs play a key role in negotiations among various stakeholders along the supply chain.[c] In exchange for their services, which include managing formularies, processing claims, and negotiating discounts and rebates, PBMs typically retain a percentage of the discounts and rebates paid by manufacturers and/or are paid a fee by health plans.

The PBM industry is highly consolidated. About 70% of all prescription claims are processed by 3 PBMs: Express Scripts, the Caremark business of CVS Health, and the OptumRx business of UnitedHealth.[8] In contrast, in 2011, the top 3 PBMs accounted for just under half of the market.[11] These 3 PBMs have also become more vertically integrated with other parts of the supply chain:

All 3 own large mail-order pharmacies and 3 of the 4 largest specialty pharmacies in the US market

With more than 80 million covered lives, Express Scripts is not only the largest PBM—it is also the third-largest pharmacy in the US as measured by prescription revenues

OptumRx is owned by UnitedHealth, a large health insurer

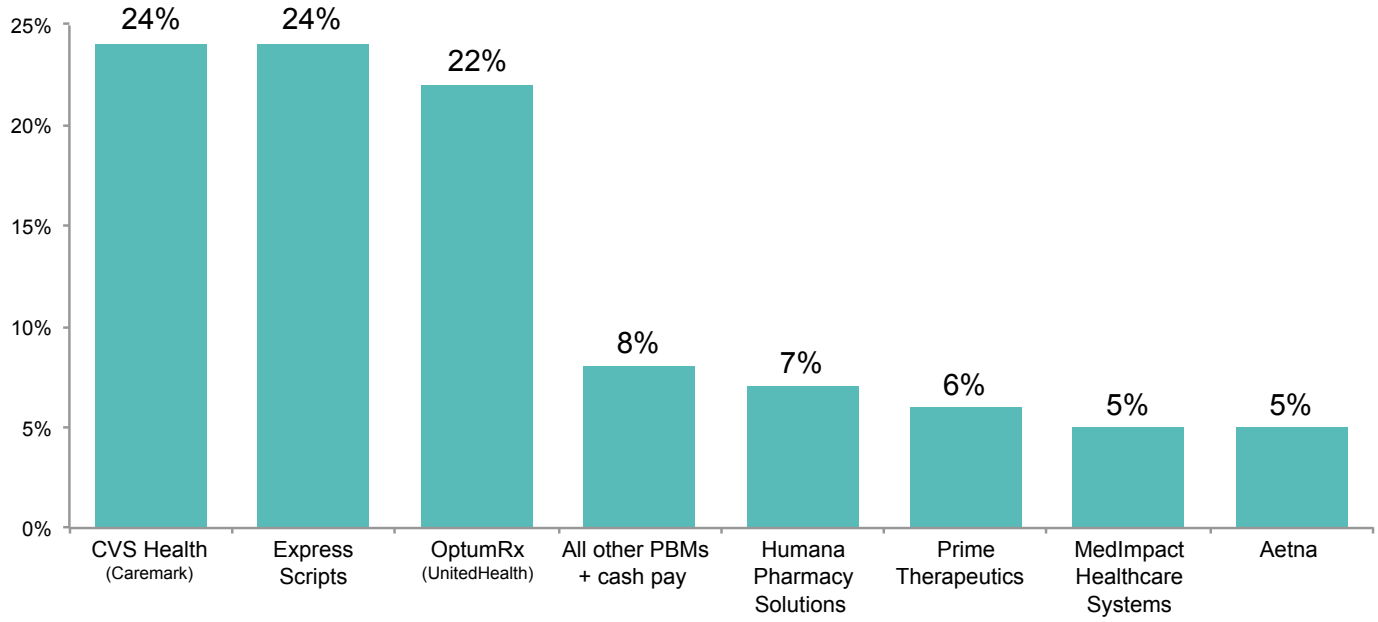
CVS Health owns the largest pharmacy chain nationwide, with more than 9,600 retail pharmacies and $60 billion in annual prescription sales[12]

Negotiation of Prices by PBMs and Manufacturers

PBMs work with insurers to design pharmacy benefits on behalf of their health plan and employer clients. Because PBMs often design formularies for clients, they have significant influence over which medications are covered and how much patients have to pay out of pocket for their prescriptions. In order to increase patients' access to their medicines, pharmaceutical manufacturers may negotiate rebates with PBMs in exchange for a medicine's placement on a lower cost-sharing tier or to avoid restrictions on utilization. The sheer volume of prescription claims managed by large PBMs (***Figure 1***) provides them with significant leverage in these negotiations.

[c] Unlike a wholesaler, a PBM does not take physical possession of a medication (unless the PBM owns a mail-order or specialty pharmacy, in which case they do).

Figure 1. Total Prescription Claims Managed, by PBM, 2016[13]



Total prescription claims include claims at a PBM's network for pharmacies, including prescriptions filled by a PBM's mail-order and specialty pharmacies. Total may not add up to 100 due to rounding.
Source: Pembroke. Consulting estimates.

Rebates negotiated between manufacturers and PBMs are typically calculated as a percentage of the list price. Additional rebates may also be paid if the total number of prescriptions dispensed, relative to other medicines in the therapeutic class, exceeds a predetermined threshold. These market-share rebates are determined retroactively, based on utilization data submitted to the manufacturer from the PBM. Increasingly, PBMs also negotiate price protection provisions with manufacturers as a standard feature of contracts.[14] Under these arrangements, manufacturer price increases in excess of predetermined thresholds result in increased rebates to the PBM.[15]

Manufacturers pay rebates directly to PBMs, which pass them on, in whole or in part, to health plans or employers according to the terms of the client's agreement with the PBM. In addition to rebates, PBMs often require manufacturers to pay administrative service fees for administering, invoicing, and collecting rebate payments. These administrative fees are intended to reimburse the PBM for services provided to the manufacturer and are not generally passed on to the PBM's client. In recent years, however, such fees have increased rapidly, and large employers and health plans have begun to negotiate for a share of the fees to be passed through.[16]

Contracting Between PBMs, Health Plans, and Employers

Services offered by a PBM can include establishment of a community retail pharmacy network, mail-order capabilities, rebate negotiations with manufacturers, formulary development, utilization management, claims adjudication, and eligibility determination. A large health plan with the capacity to perform many of these services internally may contract with a PBM just for claims adjudication services, paying the PBM for those services alone.[17] However, a smaller health plan or an employer directly contracting for PBM services would not likely have such internal capabilities and would pay the PBM a higher fee to provide a broader range of services.

Contractual arrangements between PBMs and plan sponsors include:

Terms of reimbursement for prescription medicines

Total amount of rebates that must be passed through to the health plan or employer

Type of administrative service fees to be paid to the PBM

Health plan sponsors use 2 primary models when contracting with a PBM. The first is a ***spread-pricing model***. With spread pricing, plan sponsors compensate the PBM by permitting the PBM to retain differences, or spreads, between the amount that a PBM charges to a plan sponsor and the amount that the PBM pays to the pharmacy that dispenses the drug to a consumer. Under this model, the amount paid by the plan to the PBM for a prescription can be greater than the amount paid by the PBM to the pharmacy, with the difference retained as revenue by the PBM. An alternative contracting approach is known as a ***pass-through pricing model***. This contracting approach offers additional transparency, as it ensures that the PBM will pass through the price they pay for the medications and earn a negotiated administrative fee.[18]

Health plan sponsors use 2 primary models when contracting with a PBM:

- Spread-pricing model
- Pass-through pricing model

The service fees received by the PBM may vary depending on what share of rebates and fees are passed through to the plan sponsor. For example, while PBMs typically retain an average of 10% to 15% of the rebates they negotiate, some clients choose to have the PBM pass back all of the rebates in exchange for higher flat fees.[19] In the case of smaller employers, who may not have the same level of negotiating sophistication as large employers or health plans, the PBM may retain a greater share of the rebate.[20]

As in any market, some plan sponors are able to negotiate more favorable rates than others. Employer benefit consultants help employer-sponsored health plans negotiate with PBMs for better deals, though asymmetry in information about the level of available discounts often makes it challenging for these plans to compare bids for PBM services effectively.[21] For example, the lack of standardization in the definitions used in PBM contracts (eg, what constitutes a brand vs a generic drug) may appear to be a technical nuance, yet the rebate retained by the PBM may be significantly higher depending on how a medicine is classified.[22] PBMs also may classify fees as separate from rebates, allowing them to retain these payments rather than passing them along to health plans and employers.[22]

With the growing number and scale of administrative and service fees, it is increasingly complex for plan sponsors to assess whether such fees are being passed through to reduce final plan costs or if they may even contribute indirectly to increasing plan costs. The National Pharmaceutical Council (NPC) recently conducted a study of employers' perceptions of the overall value they receive from PBMs. Almost two-thirds (63%) of surveyed employers felt that PBMs lacked transparency in how they make money, and 49% felt that rebates contributed to misaligned incentives that put PBMs' business interests before those of their clients or patients.[22]

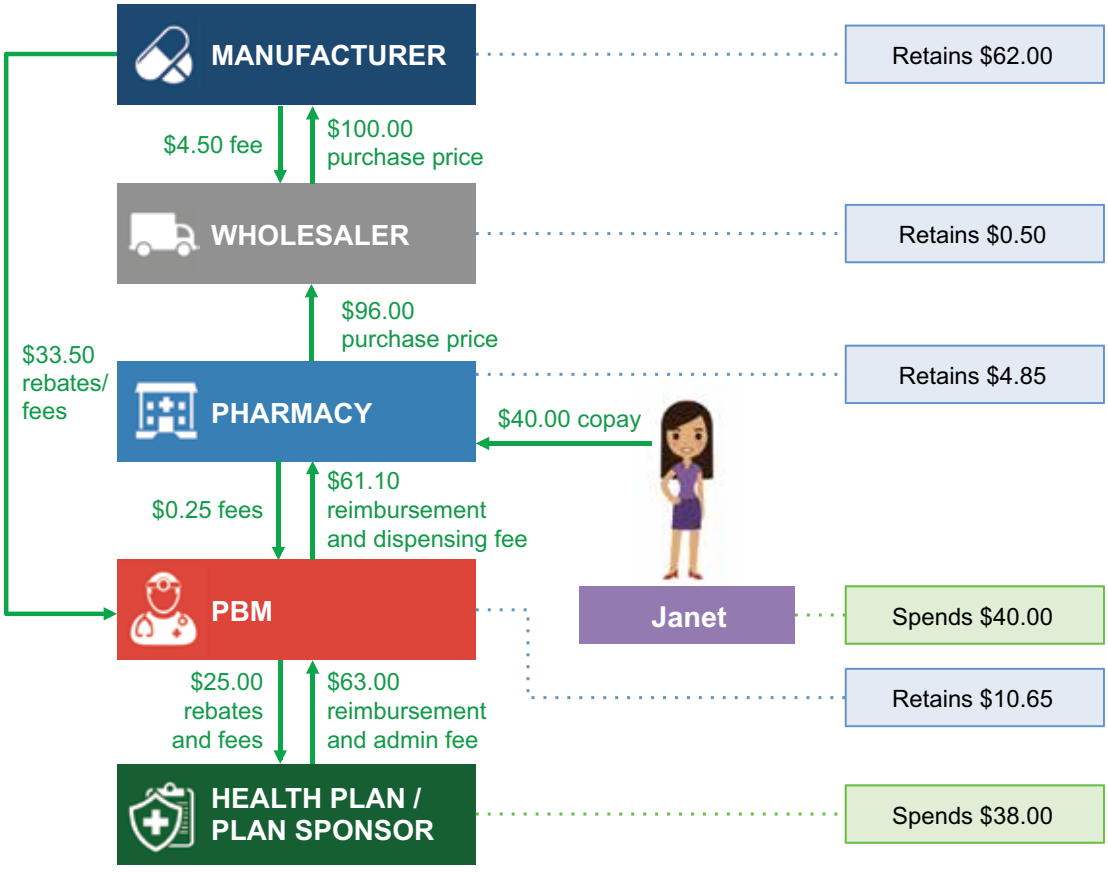
Janet, Scott, and Diane: How the System Works for Patients

Drawing from published materials and interviews with industry experts, the following examples highlight the financial flows that occur as brand medicines move through the supply chain. Illustrative examples are provided for 3 patients: Janet, Scott, and Diane, each of whom has a different chronic condition and faces a different type of cost-sharing (ie, copayment, coinsurance, or deductible). In each example, the rebate negotiated between the manufacturer and the PBM is based on information that has been publicly reported as typical for medicines in that therapeutic class.

Janet is a patient with commercial insurance taking a blood pressure medicine with a list price of $100.00. Her copayment for brand medicines is $40.00. Because Janet's health plan receives a 25% rebate off of the list price of her blood pressure medicine, her copayment of $40.00 is slightly more than the $38.00 net price paid by her health plan. Accounting for rebates and fees, the manufacturer retains $62.00, approximately two-thirds of the medicine's list price.

Flow of Payment for a $100 Blood Pressure Medicine

(Patient Pays a Copayment)



This graphic is illustrative of a hypothetical product with a WAC of $100 and an AWP of $120. It is not intended to represent every financial relationship in the marketplace.

Flow of Payment for a $100 Blood Pressure Medicine (Copayment Example): Janet

Number		Item	Amount	Computation
[WAC]		Wholesale Acquisition Cost	$100.00	WAC (set by manufacturer)
[AWP]		Average Wholesale Price	$120.00	[WAC] * 1.2 (determined by pricing publications)
Wholesaler:	[1]	Buys product from manufacturer	$100.00	[WAC]
	[2]	Collects distribution fee from manufacturer	$4.50	[1] * 4.5%
	[3]	Sells product to pharmacy	$96.00	[1] - 4.0%
	Wholesaler Retains		**$0.50**	**[2] - [1] + [3]**
Pharmacy:	[4]	Collects cost-sharing from patient	$40.00	Determined by plan
	[5]	Collects dispensing fee from PBM	$1.50	Estimate
	[6]	Collects ingredient cost reimbursement from PBM	$59.60	([AWP] - 17%) -[4]
	Pharmacy Retains		**$4.85**	**[4] + [5] + [6] - [3] - [11]**
PBM:	[7]	Collects base rebate from manufacturer	$25.00	[WAC] * 25%
	[8]	Collects administrative service fee from manufacturer	$4.50	[WAC] * 4.5%
	[9]	Collects price protection rebate from manufacturer	$4.00	[WAC] * 4.0%
	[10]	Collects and retains administrative fee from health plan/plan sponsor	$1.00	Negotiated with health plan/plan sponsor. Per claim fee
	[11]	Collects and retains transaction and E-prescribing fees from pharmacy	$0.25	Transaction ($0.10) + E-prescribing ($0.15) fees
	[12]	Retains share of base rebate and price protection rebate	$5.13	[7] * 12.5% + [9] * 50%
	[13]	Retains share of manufacturer administrative fee	$3.38	[8] * 75%
	[14]	Reimbursed for ingredient cost by health plan/ plan sponsor	$62.00	([AWP] - 15%) - [4]
	PBM Retains		**$10.65**	**[10] + [11] + [12] + [13] + [14] - [6] - [5]**
Health Plan/ Plan Sponsor:	[15]	Payment to PBM	$63.00	[10] + [14]
	[16]	Receives share of rebates and fees	$25.00	([7] + [9] - [12]) + ([8] - [13])
	Final Health Plan/Plan Sponsor Cost		**$38.00**	**[15] - [16]**
Patient Payment Amount			**$40.00**	**[4]**
Manufacturer-retained Payment			**$62.00**	**[WAC] - [2] - [7] - [8] - [9]**

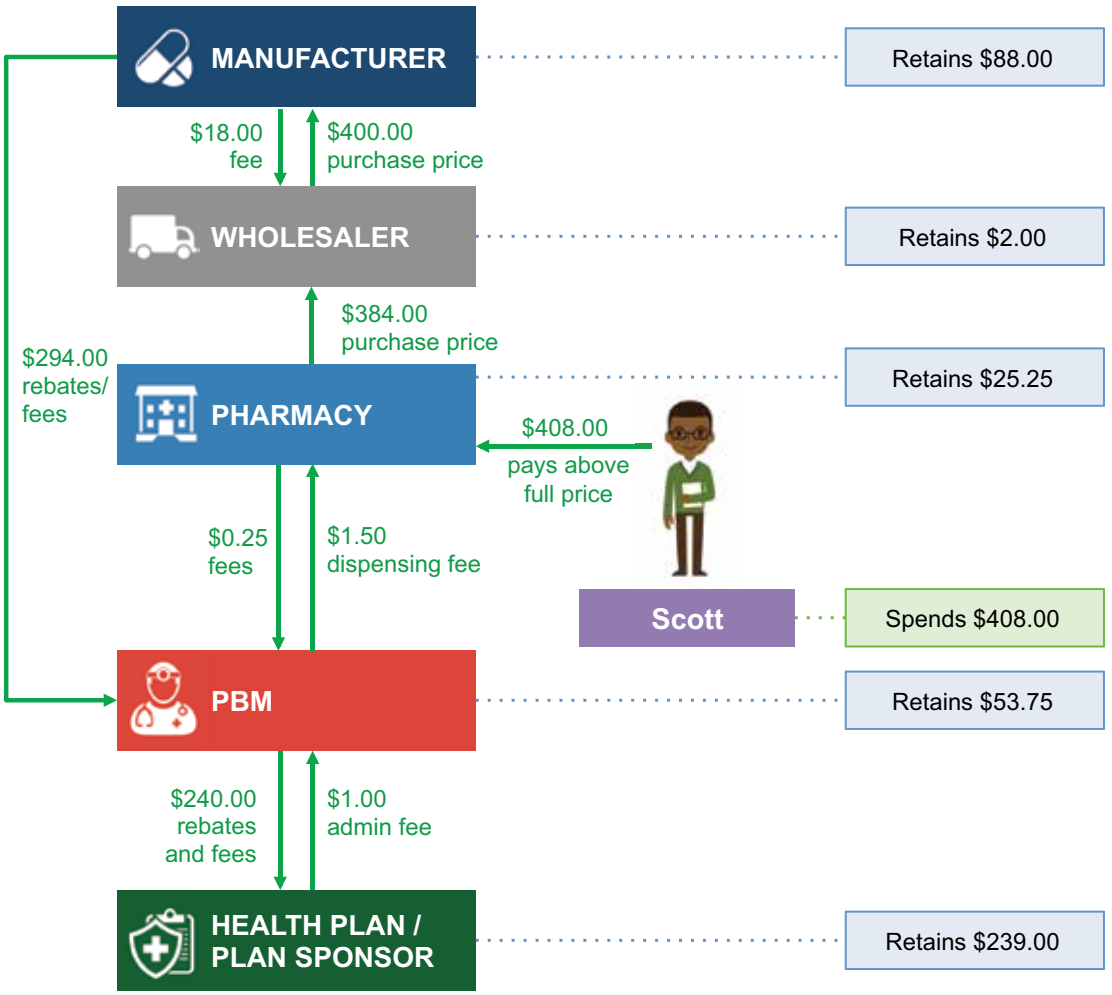
Assumptions

Brand WAC/Rx (30-day supply)	$100.00	PBM rebate pass through to health plan/plan sponsor	87.5%
Wholesaler fees/discounts (WAC discount)	4.5%	Administrative fee to PBM (from manufacturer) (WAC discount)	4.5%
Pharmacy ingredient cost reimbursement (AWP discount)	17.0%	PBM administrative fee pass through to health plan/plan sponsor	25.0%
Pharmacy ingredient acquisition cost (WAC discount)	4.0%	Price protection rebate to PBM (from manufacturer) (WAC discount)	4.0%
Pharmacy dispensing fee	$1.50	Price protection rebate pass through to health plan/plan sponsor	50.0%
PBM base rebate (WAC discount)	25.0%	Patient cost-sharing amount	$40.00

Scott takes insulin for his type 2 diabetes and has health coverage with a high deductible from his employer. Prior to meeting his deductible each year, he has to pay more than the full undiscounted cost of his medicine, $408.00, even though his health plan receives a rebate from the manufacturer that reduces the list price by 65%. Scott is paying the amount that is contracted between the health plan and the PBM which, in this case is higher than the list price of the medicine. Although the health plan does not pay for Scott's insulin while he is in his deductible, it still receives the negotiated rebate and earns $239.00 per prescription. The PBM earns $53.75, including fees and a share of the rebate it negotiated, while the manufacturer retains $88.00.

Flow of Payment for a $400 Insulin

(Patient Is in Deductible Phase)



This graphic is illustrative of a hypothetical product with a WAC of $400 and an AWP of $480. It is not intended to represent every financial relationship in the marketplace.

Flow of Payment for a $400 Insulin (Deductible Example): Scott

Number		Item	Amount	Computation
[WAC]		Wholesale Acquisition Cost	$400.00	WAC (set by manufacturer)
[AWP]		Average Wholesale Price	$480.00	[WAC] * 1.2 (determined by pricing publications)
Wholesaler:	[1]	Buys product from manufacturer	$400.00	[WAC]
	[2]	Collects distribution fee from manufacturer	$18.00	[1] * 4.5%
	[3]	Sells product to pharmacy	$384.00	[1] - 4.0%
	Wholesaler Retains		**$2.00**	**[2] - [1] + [3]**
Pharmacy:	[4]	Collects cost-sharing from patient	$408.00	[AWP] - 15%
	[5]	Collects dispensing fee from PBM	$1.50	Estimate
	[6]	Reimbursed by PBM for ingredient cost	$0.00	No payment made by PBM
	Pharmacy Retains		**$25.25**	**[4] + [5] - [3] - [11]**
PBM:	[7]	Collects base rebate from manufacturer	$260.00	[WAC] * 65%
	[8]	Collects administrative service fee from manufacturer	$18.00	[WAC] * 4.5%
	[9]	Collects price protection rebate from manufacturer	$16.00	[WAC] * 4.0%
	[10]	Collects and retains administrative fee from health plan/plan sponsor	$1.00	Negotiated with health plan/plan sponsor. Per claim fee
	[11]	Collects and retains transaction and E-prescribing fees from pharmacy	$0.25	Transaction ($0.10) + E-prescribing ($0.15) fees
	[12]	Retains share of base rebate and price protection rebate	$40.50	[7] * 12.5% + [9] * 50%
	[13]	Retains share of manufacturer administrative fee	$13.50	[8] * 75%
	[14]	Reimbursed for ingredient cost by health plan/ plan sponsor	$0.00	No payment made by health plan/plan sponsor
	PBM Retains		**$53.75**	**[10] + [11] + [12] + [13] - [5]**
Health Plan/ Plan Sponsor:	[15]	Payment to PBM	$1.00	[10]
	[16]	Receives share of rebates and fees	$240.00	([7] + [9] - [12]) + ([8] - [13])
	Final Health Plan/Plan Sponsor Retains		**$239.00**	**[16] - [15]**
Patient Payment Amount			**$408.00**	**[4]**
Manufacturer-retained Payment			**$88.00**	**[WAC] - [2] - [7] - [8] - [9]**

Assumptions

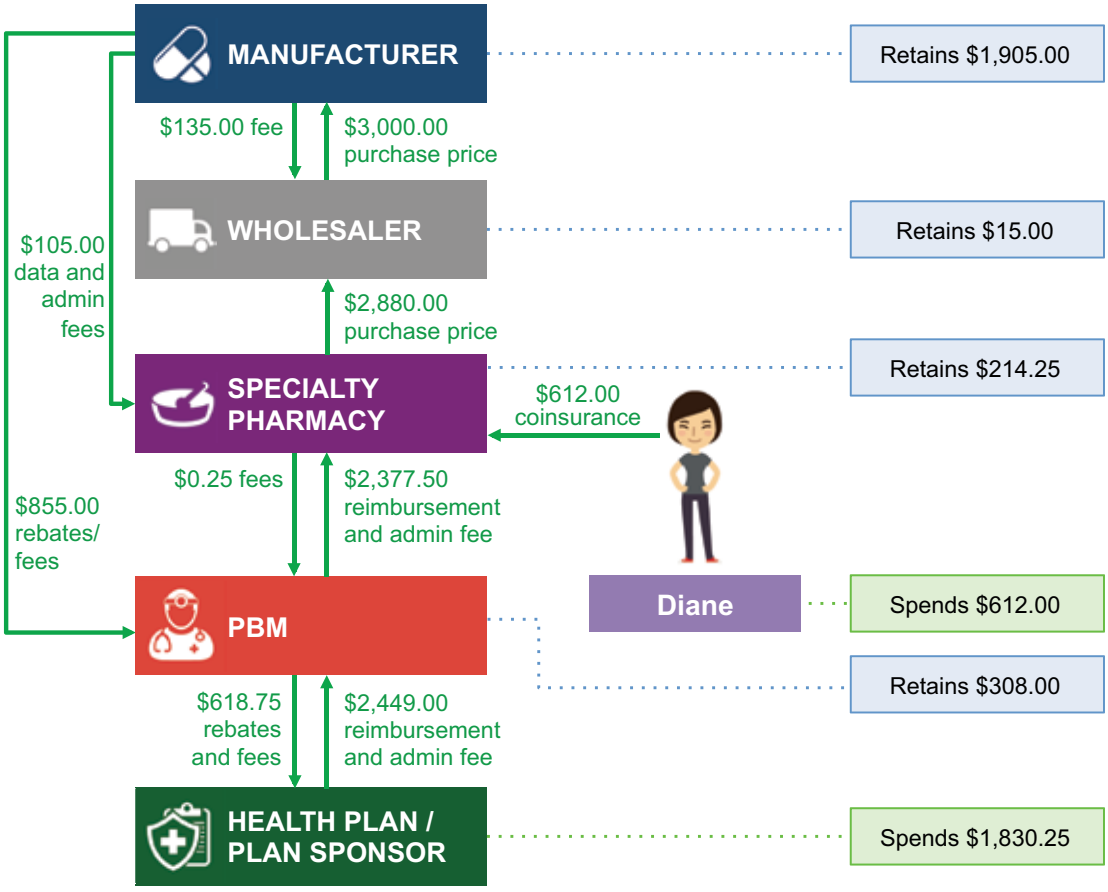
Brand WAC/Rx (30-day supply)	$400	PBM rebate pass through to health plan/plan sponsor	87.5%
Wholesaler fees/discounts (WAC discount)	4.5%	Administrative fee to PBM (from manufacturer) (WAC discount)	4.5%
Pharmacy ingredient cost reimbursement (AWP discount)	17.0%	PBM administrative fee pass through to health plan/plan sponsor	25%
Pharmacy ingredient acquisition cost (WAC discount)	4.0%	Price protection rebate to PBM (from manufacturer) (WAC discount)	4.0%
Pharmacy dispensing fee	$1.50	Price protection rebate pass through to health plan/plan sponsor	50%
PBM base rebate (WAC discount)	65%	Patient cost-sharing amount	$408.00

Diane has commercial coverage that requires her to pay a coinsurance of 20% for her HIV medicine. The manufacturer has negotiated a 20% rebate on the cost of her medicine, but Diane's health plan calculates her coinsurance based on the full undiscounted price. The PBM keeps a share of the rebate it negotiated with the manufacturer and collects additional fees calculated as a percentage of the list price, retaining $308.00. But because the medicine is dispensed by a specialty pharmacy owned by the PBM, the PBM earns a total of $522.25 on Diane's prescription ($308.00 + $214.25). In this example, the PBM also negotiated for "price protection," resulting in an additional rebate being paid to the PBM following an increase in the list price of the medicine. Half of the savings from this price protection rebate are retained by the PBM and half are passed through to the health plan, but Diane does not directly receive any of the benefit.

Note that if the manufacturer of Diane's HIV medicine were to further reduce the medicine's net price through an additional privately negotiated rebate with the PBM, it may not directly reduce Diane's cost unless the health plan moves the medicine to a lower tier or reduces the coinsurance for all medicines on that tier. Additionally, if instead of offering a 20% rebate, the manufacturer were to independently lower the list price of Diane's medicine from $3,000 to $2,400, the PBM would earn $169.65 less on this prescription. Because PBMs determine formularies and patient cost-sharing, and thus hold the keys to patient access to the medicine, reductions in the list price may jeopardize market access and formulary position of a medicine.

Flow of Payment for a $3,000 HIV Medicine

(Patient Pays Coinsurance)



This graphic is illustrative of a hypothetical product with a WAC of $3,000 and an AWP of $3,600. It is not intended to represent every financial relationship in the marketplace.

Flow of Payment for a $3,000 HIV Medicine (Coinsurance Example): Diane

Number		Item	Amount	Computation
[WAC]		Wholesale Acquisition Cost	$3,000.00	WAC (set by manufacturer)
[AWP]		Average Wholesale Price	$3,600.00	[WAC] * 1.2 (determined by pricing publications)
Wholesaler:	[1]	Buys product from manufacturer	$3,000.00	[WAC]
	[2]	Collects distribution fee from manufacturer	$135.00	[1] * 4.5%
	[3]	Sells product to pharmacy	$2,880.00	[1] - 4.0%
	Wholesaler Retains		**$15.00**	**[2] - [1] + [3]**
Specialty Pharmacy:	[4]	Collects cost-sharing from patient	$612.00	Determined by plan (20% coinsurance) (([AWP] - 15%) * 20%)
	[5]	Collects dispensing fee from PBM	$1.50	Estimate
	[6]	Collects administrative and data fees from manufacturer	$105.00	[WAC] * 3.5%
	[7]	Ingredient cost reimbursement from PBM	$2,376.00	([AWP] - 17%) - [4]
	Specialty Pharmacy Retains		**$214.25**	**[4] + [5] + [6] + [7] - [3] - [12]**
PBM:	[8]	Collects base rebate from manufacturer	$600.00	[WAC] * 20%
	[9]	Collects administrative service fee from manufacturer	$135.00	[WAC] * 4.5%
	[10]	Collects price protection rebate from manufacturer	$120.00	[WAC] * 4.0%
	[11]	Collects and retains administrative fee from health plan/plan sponsor	$1.00	Negotiated with plan sponsor/per claim fee
	[12]	Collects and retains transaction and E-prescribing fees from pharmacy	$0.25	Transaction ($0.10) + E-prescribing ($0.15) fees
	[13]	Retains share of base rebate and price protection rebate	$135.00	([8] * 12.5%) + ([10] * 0.5)
	[14]	Retains share of manufacturer administrative fee	$101.25	[9] * 75%
	[15]	Reimbursed for ingredient cost by health plan/ plan sponsor	$2,448.00	([AWP] - 15%) - [4]
	PBM Retains		**$308.00**	**[11] + [12] + [13] + [14] + [15] - [7] - [5]**
Health Plan/ Plan Sponsor:	[16]	Payment to PBM	$2,449.00	[11] + [15]
	[17]	Receives share of rebates and fees	$618.75	([8] + [10] - [13]) + ([9] - [14])
	Final Health Plan/Plan Sponsor Cost		**$1,830.25**	**[16] - [17]**
Patient Payment Amount			**$612.00**	**[4]**
Manufacturer-retained Payment			**$1,905.00**	**[WAC] - [2] - [6] - [8] - [9] - [10]**

Assumptions

Brand WAC/Rx (30-day supply)	$3,000	PBM rebate pass through to health plan/plan sponsor	87.5%
Wholesaler fees/discounts (WAC discount)	4.5%	Administrative fee to PBM (from manufacturer) (WAC discount)	4.5%
Pharmacy ingredient cost reimbursement (AWP discount)	17.0%	PBM administrative fee pass through to health plan/plan sponsor	25%
Pharmacy administrative and data fees (from manufacturer) (WAC discount)	3.5%	Price protection rebate to PBM (from manufacturer) (WAC discount)	4.0%
Pharmacy ingredient acquisition cost (WAC discount)	4.0%	Price protection rebate pass through to health plan/plan sponsor	50%
Pharmacy dispensing fee	$1.50	Patient cost-sharing amount	$612.00
PBM base rebate (WAC discount)	20.0%		

The Evolution of the Pharmaceutical Market

Over the last decade, as the market for prescription medicines has evolved in response to many changes in the insurance, regulatory, and business landscapes, interactions along the supply chain have evolved as well.

One change is the types of prescription medicines that patients are using. Innovative medicines have revolutionized the treatment of complex and costly diseases, including cancer, hepatitis C, HIV/AIDS, and cardiovascular disease. Breakthroughs in medical research have also yielded a treasure trove of new biologic medicines to treat many of the most serious and life-threatening conditions that have been, until now, without effective therapies.

Innovative medicines have revolutionized the treatment of complex and costly diseases, including cancer, hepatitis C, HIV/AIDS, and cardiovascular disease.

At the same time, the shift in utilization from brand medicines to generic drugs continues. At the end of a brand medicine's patent life, generic medicines enter the market, and the price of treatment plummets. Using tiered cost-sharing and other utilization management tools, PBMs are able to rapidly steer market share away from brand medicines, driving savings from generics. This creates a system of built-in cost-containment that does not exist in other parts of our health care system.

Another change is the rapid rate of horizontal and vertical integration among the various entities along the pharmaceutical supply chain. Through mergers and acquisitions, PBMs and health plans have created even larger companies, increasing their leverage in private drug-pricing negotations. While consolidation may lead to more efficient payment and distribution models, it also raises questions about whether incentives are appropriately aligned across all stakeholders and whether plan sponsors have sufficient expertise and visibility into contractual arrangements to make good purchasing decisions and protect their interests. Health plans and employers count on intermediaries to bargain on their behalf. If, through consolidation, competition among these intermediaries is reduced, these intermediaries may be in a position to keep a bigger share of the savings they negotiate on behalf of their clients.

Finally, through higher deductibles and coinsurance amounts, health plans have increased the amount that many patients pay for their prescription medicines. More employers are also shifting their employees to high-deductible health plans that provide little or no assistance for prescription medicines unless a patient incurs thousands of dollars of costs. These changes mean that to the patient, the cost of prescription medicines seems to be increasing quite rapidly when what is actually changing is that their insurance covers less of the cost.

Patients' cost-sharing is increasingly based on undiscounted prices.[1,3]

As the hypothetical examples in this paper show, patients may be paying more than their insurer for a prescription, and they may not benefit from negotiated rebates. Although many manufacturers are offering larger rebates every year, patients' cost-sharing is increasingly based on undiscounted prices.[1,3] This needs to change. Patients should benefit from negotiated rates in the form of lower out-of-pocket costs at the pharmacy, just like they do for other types of health care services.

The examples in the paper also show that significant revenue streams are tied to medicines' list prices

and that in circumstances when payers do not benefit from negotiated rebates, incentives may not be aligned to produce the lowest costs for patients or the health care system. We should move toward a system in which negotiations focus on rewarding the best value for patients.

In circumstances when payers do not benefit from negotiated rebates, incentives may not be aligned to produce the lowest costs for patients or the health care system.

What is encouraging is that the market is starting to move in the direction of a system that better aligns the cost of prescription medicines with their value. Biopharmaceutical companies are working with private health insurers to implement new payment arrangements for a variety of diseases. For example, cancer medicines may work better for patients with one type of cancer than those with another approved indication of the medicine. Under these potential new arrangements, prices and rebates for the medicine could differ based on the type of cancer a patient has or how well an individual responds to treatment. Biopharmaceutical companies are also considering new ways to pay for treatment when a patient needs multiple high-priced, innovative medicines and experimenting with money-back guarantees if a medicine does not work as intended. These new types of arrangements offer the potential to increase the choice of therapy, ensure that patients have affordable access to the newest medicines, and enable our health care system to achieve better outcomes at even more affordable prices.

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