White Paper

How Will a Rebate Model Impact Cash Flow in the 340B Drug Pricing Program?

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Abstract

On October 30, 2025, the Health Resources and Services Administration (HRSA) approved plans for eight manufacturers to participate in a rebate pilot for the 340B Drug Pricing Program ("340B Program"), signaling a shift from upfront discounts to retrospective rebates. Rebate critics assert that rebates will be a severe financial burden on providers due to interest costs associated with cash flow, while rebate advocates contend they will not impose any significant costs on providers.

We developed data-driven cash flow models to estimate financing (interest) costs under eight drug inventory and rebate scenarios including physical inventory, physical replenishment (also known as virtual replenishment), credit-based replenishment, and two versions of a 340B rebate model. Scenarios spanned entity-owned pharmacies and contract pharmacies. Sensitivity analyses tested extended rebate payment timelines, higher interest rates, and shorter wholesaler payment terms.

Across all eight scenarios, financing costs were small — less than half of one percent of the estimated reimbursement value of the 340B program — expressed as a percentage of wholesale acquisition cost (WAC). For entity-owned pharmacy purchases, interest costs for the rebate model (0.19%) were no larger than for the predominant drug inventory model used by those pharmacies, referred to as physical replenishment. For contract pharmacies, the rebate model had lower interest costs (0.03%) than both types of replenishment model — physical and credit-based replenishment. Even under unfavorable assumptions, rebate interest costs remained under 1.2%.

Using 2023 data for the 10 drugs selected for both Medicare Part D price negotiation and the 340B rebate pilot in 2026, the estimated interest costs at entity-owned pharmacies are expected to total $11 million under the 340B rebate model, or just 0.02% of their combined list price value ($56.2 billion).

These findings suggest that financing costs under the 340B rebate model are small and unlikely to be a barrier to its use by covered entities.

Introduction

The Health Resources and Services Administration (HRSA) recently announced its intent to implement a 340B rebate model pilot program.[1,2] Multiple government reports previously have expressed concerns about duplicate 340B/Medicaid rebates and diversion in the 340B program.[3-6] The implementation of price negotiation for Medicare Part D drugs beginning in January 1, 2026 has created another risk of duplicate discounts, because a Medicare negotiated price is not owed where a lower 340B price is offered.[7] Due to concern about these additional potential duplicate discounts, HRSA's rebate pilot is focused on the first 10 drugs selected by the Centers for Medicare & Medicaid Services (CMS),[1] although the announcement indicates that a rebate model may be employed more broadly at a later date.

Supporters of the rebate model have been advocating for its adoption for more than five years.[8] In pressing for the adoption of rebates, its advocates have pointed to the fact that the Public Health Service Act repeatedly refers to both "rebates" and "discounts" as permissible payment mechanisms.[9] Furthermore, the rebate model may require covered entities to implement more robust practices for data integrity, inventory tracking, and eligibility verification, standards that more closely align with the rules used to manage drugs outside of the 340B program.

Opponents of the rebate model, however, have argued that the statute did not permit this payment mechanism under any circumstances. Although that position has now been rejected by two district courts, those courts have held that HRSA has the authority to pre-approve any use of a rebate.[10] Those courts have concluded that language in the statute that permits the Secretary to "take into account" both "rebates and discounts" in determining whether the fact that the correct 340B price has been made available to covered entities should be interpreted as providing HRSA with authority to forbid the use of rebates, even when they would effectuate the appropriate 340B payment amount. Manufacturers,

which contend that this position is inconsistent with the plain language of the statute, appealed those decisions.[11]

An appellate panel recently heard those manufacturer appeals. At oral argument, counsel for the government asserted that HRSA's failure to adopt a broad rebate model was appropriate because that model "risks imposing additional costs and burdens on providers." That argument appeared to resonate with at least one of the judges hearing the case who asked if a rebate model would require providers "to give interest-free loans to manufacturers."[12] A decision is expected sometime in the next several months. Putting aside the litigation, two competing narratives have emerged about what, if any, interest costs are associated with the use of 340B rebates. Rebate critics, including hospital advocacy groups, have argued that "...rebate schemes... would impose crushing financial burdens on safety-net hospitals".[13] Those arguments are a primary focus of the briefing in the litigation over the rebate model. Manufacturers and other rebate proponents, including some patient groups and employer coalitions,[14] dispute these assertions. Rebate proponents claim that the rebate model would not meaningfully increase costs

to 340B hospitals and clinics, and that rebates would "improve integrity and transparency within the 340B program", in part, by "mitigating duplicate discounts".[15]

In the litigation over the rebate model, the primary support offered for the contention that rebates would financially burden 340B covered entities is a report based on a member impact survey that was conducted by a 340B hospital advocacy group.[16, 17] This report stated that the average "float" — the difference between purchasing at WAC versus the 340B price — could be $8.9 million to $208 million for disproportionate hospitals depending on their number of beds.

This member survey has been criticized by some.[18] The survey instrument used was not disclosed, so it is not possible to assess potential bias that it might reflect. Furthermore, although the survey was completed by less than one percent of all 340B covered entities, it does not appear to have been applied using a randomized sample of respondents.

In addition, the survey was based on the assumption that rebates would be paid 30 days after submission of claims data, 20 days slower than mandated under HRSA's pilot.[1] In referencing the "float" as a cost, the survey did not attempt to discount that figure for the number of days that this assumed delta would be borne or at what interest rate financing would be available to meet that cost. As an example, a $208 million "float" financed for an average of 10 days at an interest cost of 12% per year would be $693,000. Collectively, these shortcomings make it difficult to rely on this survey or its preliminary results.

At the same time, rebate proponents have offered relatively little analysis of the impact a rebate model would have on 340B providers' cash flow. Cash flow measures the movement of money in and out of a business over time, and can be an indicator of financial health and a source of financial stress, since even a profitable business may struggle with poor cash flow. Drug discounts applied earlier in the drug supply chain, such as upfront discounts, could potentially create more positive cash flows than payments applied at a later date, such as rebates.

The financial impact of 340B rebates on covered entity cash flow has been studied under various scenarios involving contract pharmacy transactions.[19] Based on the assumptions made, that study concluded that a rebate model improves cash flow by 0.7%. Not all covered entities use contract pharmacies, though many do.

Given the sharply divergent views expressed about the rebate model, the cash flow consequences of a shift from upfront discounts to rebates warrant empirical evaluation. This seems particularly true because the 340B program reached $147.8 billion in sales at WAC in 2024 and grew 16.7% year-over-year.[20] To the best of our knowledge, the current study is the first published investigation of the financial impact of 340B rebates on entity-owned pharmacies using cash flow models. Entity-owned pharmacies are the predominant model, comprising approximately 75% of 340B purchases in 2024.[20]

Discount mechanisms in the 340B program

During the life of the 340B program, two mechanisms have been used to deliver lower cost drugs — upfront discounts and rebates. With an upfront discount, the 340B hospital or clinic pays a reduced price at the time of purchase, lowering its initial acquisition cost. In contrast, under a rebate model, the covered entity initially pays a non-340B price at the time of purchase. That price may be the full list price or WAC, a lower Group Purchasing Organization (GPO) discounted price, or another price. Whatever the initial price, a rebate is then used to reduce the 340B purchase price to the 340B price. While both upfront and rebate mechanisms reduce the cost of drugs, they differ in timing, which may affect the covered entity's cash flow.

In addition to timing differences that may exist between a 340B discount and rebate, there is normally a lag between when a 340B provider receives a drug it has ordered from a distributor and when the provider pays the distributor. If the rebate is received before the covered entity pays the distributor, there is no negative impact to the covered entity's cash flow.

Throughout the program's more than 30-year history, many drug purchases have used upfront discounts, but others have been based on rebates or otherwise reflect initial purchases at commercial prices. For example, AIDS Drug Assistance Programs (ADAPs) have long used a rebate model to access 340B pricing. Those rebates were employed without HRSA approval, but the agency subsequently stated that ADAPs could operate in that fashion.[21] In addition, under the 340B physical replenishment model (defined below), because a 340B discount cannot be claimed until a full package of drug has been accumulated, 340B providers make purchases at commercial prices where they do not have sufficient accumulations to build their inventories through replenishment.

In addition, purchases at commercial prices have been necessary in the 340B program because it is sometimes unclear at the time of purchase whether the drug will be 340B-eligible. It is common for many in-house 340B pharmacies at covered entities to have mixed-use dispensing requiring significant purchases at commercial prices.

340B rebate model pilot

CMS has permitted manufacturers to choose between upfront discounts and retrospective rebates to effectuate Medicare negotiated prices, regardless of whether a 340B price also applies. Most of the public comments CMS received favored the retrospective or rebate approach (cf. page 42 of reference 7). We are analyzing cash flow for these negotiated price rebates separately from the current study,[22] and upon study completion, will compare this 340B analysis to the negotiated price conclusions.

ADAPs and rebates

To illustrate how rebate timing may influence cash flow, we examine how ADAPs use rebates. Rebates have been part of the 340B program since 1998,[23] as one of two operating models used by ADAPs — the other being direct purchases. In the rebate model, ADAPs do not purchase drugs directly. Instead, they obtain them through a contract pharmacy, pay the pharmacy for patient copays and deductibles, and submit rebate claims to the manufacturer. According to a recent report, 45 out of 49 ADAPS (92%) used rebates, either exclusively or in combination with direct purchases.[24] That is, rebates are the predominant mechanism ADAPs use to access 340B discounts.

Unlike the HRSA pilot, which would require manufacturers to make payments within 10 days, 340B ADAP drug payments to contract pharmacies, which acquire product at commercial prices, are made on a 30-day timetable. Despite that longer timeline, revenues from the ADAP system have expanded from just 5% of ADAP funding for HIV/AIDS patients in 1997, to 47% in 2022 and 55% in 2025.[18] This reflects a growth rate of 1,000% from 1997 to 2025, at an average annual growth rate in excess of 37%. The use of rebates in an ADAP context does not appear to have impeded program growth. Indeed, the growth of that segment of the 340B program has been quite robust notwithstanding its heavy dependence on a rebate model.

The importance to patients of upfront discounts versus rebates

We see little evidence that 340B upfront discounts lower patient out-of-pocket costs or that rebates would reduce patient assistance. Although 340B discounts lower drug acquisition costs for 340B hospitals and clinics, they do not appear to lower drug costs for patients in any meaningful way. A recent study involving prescriptions for branded drugs filled at contract pharmacies found that in at least 95% of cases, patient cost sharing was based on the full list price for the drug.[25] Importantly, that low level of assistance occurs where covered entities do not themselves purchase the drugs being used and dispensed to patients. In the normal course, the contract pharmacies purchase those drugs at commercial prices. Similarly, 340B hospitals, which receive 87% of the benefits of the 340B program, only have an average charity care ratio of 2.15%.[26] Neither of these findings compare favorably to the 31% of the U.S. population that is uninsured or underinsured.

Some patient groups have advocated for the adoption of a rebate model arguing that rebate systems will increase patient access to 340B pricing.[27] In this regard, one manufacturer has committed to paying its rebates even faster than HRSA's proposed pilot's timetable if the covered entity agrees to share 340B pricing with patients.[28]

The importance to manufacturers of upfront discounts versus rebates

While patient costs are either unaffected by the payment method used or would be reduced by a rebate model, the implications for other stakeholders are more complex.

Duplicate discounts occur in the 340B program when a manufacturer provides both (1) a 340B discount and (2) a Medicaid or other payer rebate on the same unit of drug. For example, if the 340B discount was 60% and a payer rebate was 55%, the total discount would be 115%, representing an absolute loss on the drug sold.

It has been estimated that the Medicaid duplicate discount rate is 3-5%.[29] Applying that duplicate discount rate to nationwide Medicaid rebate dollars for 2019, the study estimated that Medicaid duplicate discounts alone were between $933 million to $1.6 billion. If we adjust those findings for the increased subsequent growth of the 340B program, duplicate Medicaid discounts were between $1.1 billion and $2.0 billion in 2024.

A recently proposed rule related to Medicare Part D inflation rebates describes how CMS intends to remove 340B units from Part D units that are subject to a Medicare inflation rebate.[2] Based on preliminary analyses, the agency estimates Part D and 340B duplicate discounts to be between 10 percent and 35 percent.

No estimate of diversion in the 340B program has been made, although HRSA issued audit findings citing findings of diversion more than 380 times in 2018.[5] Unfortunately, the 340B program does not require 340B hospitals or clinics to audit their operations for diversion or duplicate discounts.

340B drug inventory and pricing models

In the 340B program, both upfront discounts and rebates can be implemented using various drug inventory and pricing models. While these models may deliver the same revenue at entity-owned pharmacies and contract pharmacies, they differ in the timing of cash flowing in and out of the 340B entity. This section provides a description of these models, while a high-level summary is given in Figure 1 and a technical description of each model is given in Appendix B.

Figure 1. Summary of drug inventory and rebate models used in the study

MODEL	WHERE USED	DISCOUNT MECHANISM
Physical inventory	Entity-owned pharmacies only; used less often now than previously	Upfront discount
Physical ("virtual") replenishment	Entity-owned and contract pharmacies; the predominant model in use	Neutral drug dispensed initially; replenished drug purchased at 340B pricing
Credit-based replenishment	Mostly contract pharmacies; usage is increasing	Purchase at WAC/GPO pricing, with 340B pricing applied by credit after drug is dispensed
340B rebate model	Entity-owned and contract pharmacies; the model HRSA is piloting	Purchase at WAC/GPO pricing, with 340B pricing applied by rebate 7-10 days after drug is dispensed
340B presumptive credit	Entity-owned pharmacies only; a 340B rebate variant with faster initial payment	Purchase at WAC/GPO pricing, with 340B pricing applied by rebate 7 days after drug is purchased

In the original physical inventory model, entity-owned pharmacies at 340B entities maintained separate stocks of 340B and non-340B drugs, with the patient's 340B eligibility being determined when the drug was dispensed. However, once retail and mail pharmacies began to be contracted by covered entities to dispense 340B drugs to their patients, the use of physical inventory was used less extensively because the 340B status of the patient was in general unknown when the prescription was filled. To address this challenge, the 340B physical replenishment model was introduced, also known as "virtual replenishment". In this model, "neutral inventory" (neither 340B nor non-340B) replaced separate physical inventory, the contract pharmacy dispensed neutral inventory to 340B patients, and algorithms using claims and other data were used after the drug was dispensed to the patient to determine whether the drugs were 340B eligible. If the 340B entity decided to "convert" the dispensed drugs to 340B, it would purchase replacement product at 340B pricing and physically ship replacement drugs to the contract pharmacy to restore inventory. In addition to its wide use at contract pharmacies, multiple interview participants reported that physical replenishment is also the predominant drug inventory model at entity-owned pharmacies.

A drawback of the physical replenishment model is the time lag between dispensing and replenishment, which can lead to overstocking — or "inventory swell". This problem can be particularly significant for specialty drugs used to treat rare diseases.

This issue and related efforts to maximize 340B profits led to the creation of a third model for upfront discounts known as credit-based replenishment. In this system, the contract pharmacy buys product at WAC or GPO pricing. When the drugs are dispensed and are 340B eligible, replacement drugs are purchased by the covered entity at the 340B price, and the wholesaler credits the non-340B account of the contract pharmacy at WAC.[30,31] This is a financial transaction only and does not involve the physical movement of product. According to industry stakeholders we interviewed, credit-based replenishment is rapidly replacing physical replenishment as a replenishment model. Although our understanding is that credit-based replenishment is primarily used at contract pharmacies, we also modeled it at entity-owned pharmacies for completeness.

Another inventory model was developed when some manufacturers institute policies limiting the number of contract pharmacies covered entities could use to dispense product to 340B eligible patients. When two appeals courts held that those policies did not violate the 340B statute,[32,33] some 340B hospitals and clinics purchased drugs at 340B pricing, had that product delivered to non-contract pharmacy sites, and then physically reshipped the product to their contract pharmacies. We have not included this alternative distribution model in our cash flow study because manufacturers contend that these systems are unlawful under multiple state and federal laws.

As explained above, the 340B rebate model involves the 340B hospital or clinic purchasing the product initially at a commercial price, with the provider then receiving a rebate after the drug is dispensed or administered to the patient. The rebate brings the provider's net acquisition price to the 340B price.

By the third quarter of 2025, five manufacturers had announced their intention to implement a rebated model. They were Eli Lilly and Company, Johnson & Johnson, Novartis, Bristol Myers Squibb, and Sanofi. All but one stated that they would make payments available in no more than 14 days, and several stated that payments would be made in as few as 7. For instance, under Sanofi's "presumptive credit" model, it commits to presumptively transmit a 340B credit upon submission and validation of certain purchase data, accelerating the payment to as few as 7 days.[34]

The rebate model is quite similar to the credit-based replenishment model described above for contract pharmacy transactions. In a 340B credit-based replenishment model, a contract pharmacy uses product typically acquired at commercial prices to dispense to

a 340B eligible patient, and the covered entity obtains the drug at 340B pricing after the drug is dispensed. Similarly, in the rebate model, a commercially priced unit is dispensed to a 340B eligible patient, and the 340B price is obtained thereafter through a rebate paid by the manufacturer. In both cases, there is no upfront discount.

Differences exist in how these various drug inventory and rebate models are implemented depending on whether they are used at entity-owned pharmacies or contract pharmacies, differences that we have captured in our cash flow models.

The choice of drug inventory or rebate model matters because of differences in acquisition cost and timing of payments, which can impact cash flow.

Study aims

This study has three aims: (1) to describe similarities and differences between rebates and other forms of 340B discounts; (2) to create a robust cash flow model and use it to quantify cash flow for eight drug inventory and rebate models (defined below); and, (3) to compare these findings to those from a cash flow model for drugs subject to Medicare price negotiation when effected using rebates.[22] By pursuing these aims, we hope to move beyond competing narratives and provide a data-driven foundation for policy development and strategic planning.

Data and methods

Data

This study uses a combination of sources for cash flow model parameters. When available, we prioritized public documents (such as financial statements), legal documents, government documents, and public facing corporate documents. Due to the proprietary nature of commercial contracts, we also derived information from interviews with 340B stakeholders. A matrix summarizing assumptions and parameters is given in Appendix A.

Our cash flow model used several parameters including drug distributor payment terms, financing (interest) cost for 340B hospitals and clinics, and inventory turnover.

Drug distributor payment terms are the contract rules that specify when and how a provider must pay its distributor for drugs. Payment terms vary from pre-pay to 45 days or more, but multiple respondents in our interviews said that the standard is 30 days unless the provider agrees to a shorter period in exchange for more favorable terms. We used a value of 30 days in our analysis.

There is a range of potential financing cost for covered entities. For large, non-profit hospitals, the average cost of capital is 4-5%,[35] depending on the hospital's financial situation. This figure was confirmed by interview respondents, including 340B hospital stakeholders. Smaller hospitals and clinics would instead obtain small business loans from financial institutions such as banks, at a higher interest rate.[36] Wholesalers have reported late payment fees as high as 18%,[37] which could be used as an upper bound for the cost of capital. To reflect characteristics of both 340B hospitals and clinics and to lean towards being conservative, we used a figure of 12% annual interest for financing costs.

We did not model interest income from positive cash balances. Although hospitals with strong liquidity can benefit from investment returns,[38] interest income from

smaller hospitals and grantees with low positive cash flow is likely insignificant.

Inventory turnover is the average number of days drug inventory is held before being dispensed or administered. While various sources have estimated this to be around 30 days,[39,40] this represents an average across all product types including generics with low price points, which have relatively slow turnover, and high-cost branded products, which interview respondents told us have a two-week turnover. 340B purchases are mainly branded products, because the fees charged by third-party administrators and contract pharmacies make it uneconomic to convert generic drugs to 340B.[41] Thus, we assumed inventory turnover was 15 days for our cash flow model.

We assumed the 340B discount was 55%, which is representative of the 340B program as a whole, but we also ran scenarios using the 10 IPAY 2026 drugs selected for the 340B rebate pilot (see Methods for more details).

Methods

Our cash flow models describe the process from the drug being purchased and dispensed through payments to the wholesaler, reimbursement by the payer, replenishment, and rebate adjudication and payment. Not every step will occur for every drug inventory or rebate scenario.

We focused on self-administered drugs for the current study to align with the 340B rebate model pilot, which is confined to 10 such drugs.[1]

To facilitate comparisons, day 0 for each drug inventory or rebate model is aligned to be when the drug was dispensed to the patient. We assumed all rebate claims submitted would be paid within the 10 day mandatory time period specified by HRSA. The pilot limits the reasons that a payment can be denied and the length of time that a manufacturer can take in reviewing a claim. In addition, we note that HRSA can force the payment of a claim that is incorrectly denied and can impose a civil monetary penalty of $5,000 for every instance that a covered entity is not provided with a requested rebate in a timely manner.

At entity-owned pharmacies, the scenarios we modeled were physical inventory, credit-based replenishment, the 340B rebate model, and the presumptive credit variant on the rebate model. For physical replenishment at entity-owned pharmacies, the initial purchase is at WAC, with subsequent purchases made at 340B or non-340B pricing depending on the 340B eligibility of the drugs.[42]

At contract pharmacies, we modeled physical replenishment, credit-based replenishment, and the 340B rebate model. The physical inventory model is not used at contract pharmacies.

Interest costs were expressed as a percentage of WAC. We also estimated total interest costs for the 10 drugs selected for Medicare Part D price negotiation in 2026. Specifically, for each drug we combined 2023 pre-MFP Part D gross drug costs[43] with estimates for 340B rebates based on Q4 2023 IQVIA DDD subnational sales data.

Limitations

Although we have not attempted to enumerate every cost due to cash flow, some of which are not significant or non- financial, our study follows a consistent framework for analyzing cash flow differences between rebate and non-rebate drug models.

While 340B is a drug discount program, the current mechanism set up to recognize 340B revenue requires a payer — typically an insurance company, a federal or state health care program, or an employer — to fully reimburse covered entities for drugs in a timely manner. The timing of reimbursements should, under state and federal law, be the same for both 340B and non-340B drugs. They should also be unaffected by the inventory or payment model. Given that consistency, we have not separately considered the impact of payer reimbursement timing.

Additionally, analyses in this study assumed no Part D patients, so reimbursement would be the same as regular commercial plans. The authors will explore the interaction of 340B and MFP rebates in a subsequent paper.

The study analyzes each 340B drug inventory and rebate model separately, but in practice, covered entities may use a combination of models. For example, while “clean sites” that dispense only 340B drugs exist, 340B hospitals also have inpatient drug usage, which does not qualify for 340B pricing. This often necessitates the use of a replenishment model at the main facility to manage the mix of 340B and non-340B drug inventory, even without considering the impact of contract pharmacies.

Finally, our study does not evaluate the potential operational costs, if any, associated with implementing the 340B rebate model, such as hiring new FTEs or investing in new technologies.[11] It is important to note, however, that hospitals and clinics participating in the 340B program are required to maintain access to patient eligibility data to comply with the 340B patient definition, regardless of the discount mechanism used. Accordingly, those costs need to be incurred, to a substantial degree, whether a rebate model is used or not.

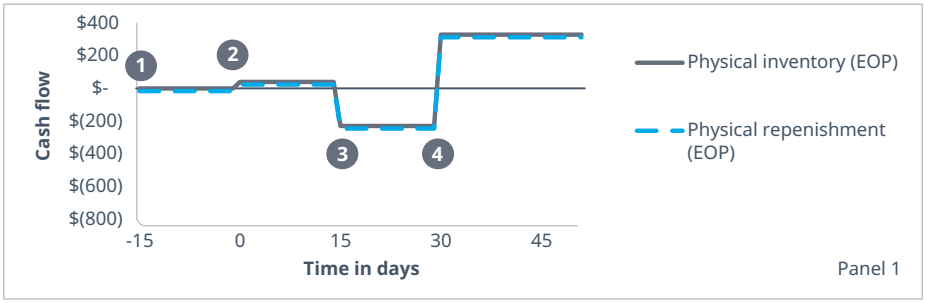
Findings

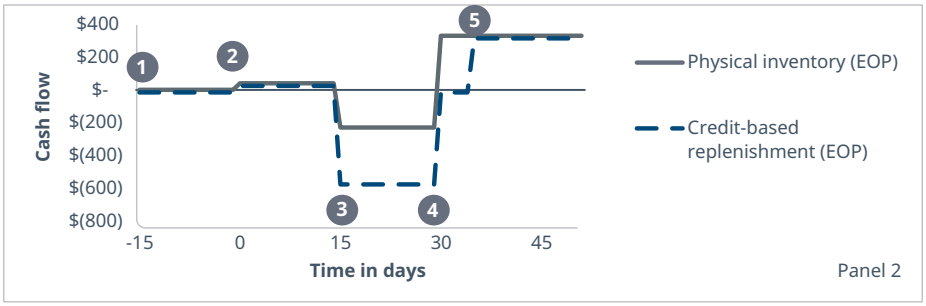
Cash balance graphs

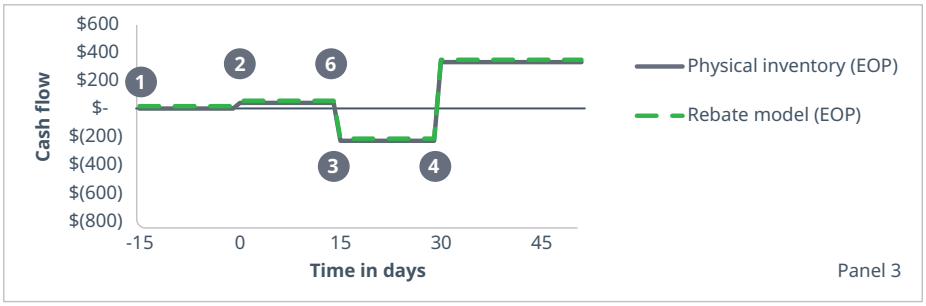
Cash flows were analyzed for a 340B prescription across its full lifecycle under eight drug inventory and rebate models, from the point of view of the 340B covered entity. For entity-owned pharmacies, the cycle starts with the pharmacy — which is considered to be part of the 340B covered entity — purchasing and receiving the drug, and ends with the pharmacy receiving the reimbursement and rebate for the drug dispensed. Figure 2 illustrates five modeled scenarios for entity-owned pharmacies. For each scenario, only those steps that affect cash balances are included in the figures (see Appendix B for further details).

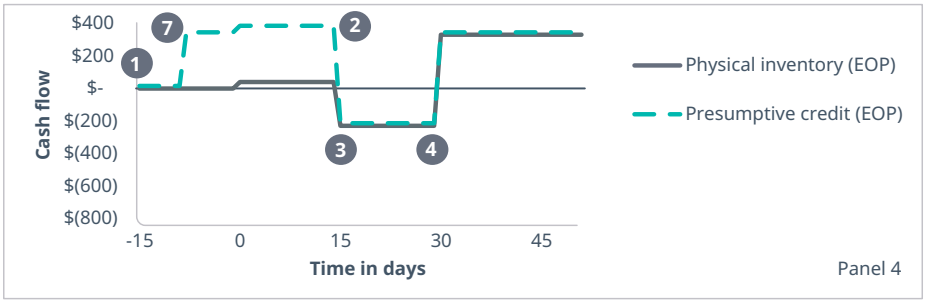
Figure 2. Cash flow for drug inventory and rebate models at entity-owned pharmacies (EOPs)

Events: 1 Drug purchased. 2 Drug dispensed, copay collected. 3 Payment to wholesaler. 4 Payer reimbursement. 5 340B credit paid. 6 340B rebate paid. 7 Presumptive credit paid.









The parameters that we used to compare cash flows under different inventory and rebate models involved a drug with a list price and reimbursement value of $600, a 340B price of $270, and a $40 copayment to be paid by the patient. The covered entity's "spread" between the reimbursement and the 340B acquisition price is $330. As indicated above, we use a timeline in which the drug is delivered to the covered entity on day -15, dispensed on day 0, a rebate payment is made (where it applies) on day 15, the wholesaler is paid on day 15, and the drug is reimbursed by the payer on day 30. For a detailed summary of assumptions, see Appendix A.

Panel 1 of Figure 2 depicts the physical inventory scenario, characterized by a small change when the drug is dispensed due to the patient's $40 copay, and then a drop to a negative cash position of -$230 between days 15 and 30, which reflects the period during which the covered entity bears the inventory cost. The 340B acquisition cost for the product ($270) minus the assumed patient copay ($40) is the amount that the covered entity carriers under that model. There is a rebound to the final revenue of $330 on day 30 when the payer reimburses the covered entity. Panel 1 also describes the physical replenishment scenario, in which the covered entity can purchase the drug at the 340B price after an initial purchase at WAC.

Panel 2 of Figure 2 adds credit-based replenishment for comparison. Although the two models converge at the same final revenue ($330), the credit-based replenishment model exhibits deeper negative cash position and slower recovery, indicating less favorable cash flow. This is because the product must be replenished after it is dispensed, and the need to accumulate a full unit before seeking replenishment can be an additional source of delay. The area between the cash line for the replenishment model and the one for physical inventory represents an incremental interest cost, stretching from day 15 to day 35.

Panel 3 of Figure 2 compares the physical inventory model to the 340B rebate model. With the 340B rebate issued on day 15, coinciding with payment from the covered entity to the wholesaler, the rebate model ends up with the same cash flow as the physical inventory model.

Panel 4 of Figure 2 contrasts physical inventory with the presumptive credit rebate model, in which a qualifying entity receives a presumptive credit seven days post-purchase — well before the drug is dispensed — resulting in a substantially better (higher) cash position until day 15, after which it is aligned with physical inventory. This model is clearly more favorable for covered entities than the physical inventory model.

Figure 3 summarizes cash flow for contract pharmacies. Unlike the entity-owned pharmacy scenarios, summarized in Figure 2, the timeline begins at day 0 because the covered entity does not bear inventory costs. Those costs are borne by the contract pharmacy. Panel 1 compares physical replenishment and credit-based replenishment, both of which exhibit a cash dip on day 5 when the entity pays fees ($54) to the Third-Party Administrator (TPA) it uses to identify 340B-eligible drugs. Subsequent cash inflows consisting of the 340B discount minus the contract pharmacy fee reach the final revenue to the covered entity of $198 at day 35 for the credit-based replenishment model and at day 50 for the physical replenishment model, given the additional time needed to accumulate a full unit for replenishment.

Panel 2 of Figure 3 contrasts the rebate model with credit-based replenishment. Under the rebate model, the initial decrease is the same as in the first panel, but net revenue increases quickly on day 15 with the rebate payment ($330), bypassing the contract pharmacy intermediary, which is a source of payment delay. Consequently, the rebate model achieves the final revenue ($198) approximately 20 days earlier than credit-based replenishment — demonstrating superior liquidity.

Figure 3. Cash flow for covered entities for drug inventory and rebate models at contract pharmacies

Events: 2 Drug dispensed. 3 TPA fee paid. 5 340B credit paid. 6 Payer reimbursement passed to covered entity. 7 340B rebate paid.

Interest costs

While having cash balance graphs describing the different scenarios helps visualize cash flow differences, calculating and comparing interest costs for each of the modeled scenarios is necessary in order to assess their impact and permit a comparison of those impacts. As a reminder, in order to stay conservative in our estimates, this analysis focuses on interest costs accrued from negative cash balances, omitting any potential interest income from positive cash balances.

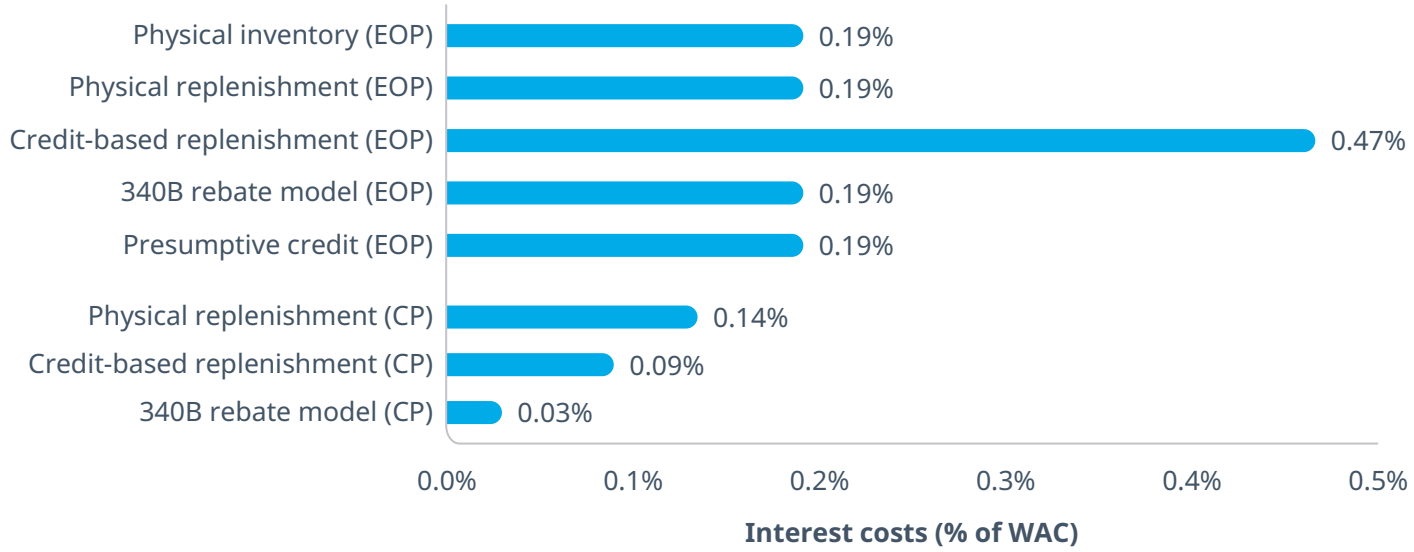
As seen in Figure 4, there is a range of interest costs for the various scenarios at entity-owned pharmacies and contract pharmacies. Based on our illustrative example of a branded drug with a $600 WAC and 12% annual interest, the proposed 340B rebate model and presumptive credit rebate model both match the interest cost of the traditional physical inventory model at $1.15 for entity-owned pharmacies. Indeed, the two 340B rebate models are superior to credit-based replenishment with its interest cost of $2.80. Notably, the $1.15 interest cost associated with the two rebate models, physical inventory, and physical replenishment all represent only 0.19% of the $600 WAC for the drug.

For contract pharmacy scenarios, the results were even more favorable to the 340B rebate model. The cash balance graphs illustrate that its cashflow is superior to the existing replenishment models at contract pharmacies. As a result, the interest cost for rebate model is only $0.18, versus $0.54 and $0.81 for credit-based and physical replenishment.

Interest costs for the 10 IPAY 2025 drugs

We applied our cash flow model to the 10 drugs selected for Medicare Part D price negotiation in 2026, assuming that 340B purchases for these drugs were equal in magnitude to the 2023 pre-MFP Part D gross drug costs ($145 billion).[44] At entity-owned pharmacies, total interest costs under the rebate model for these 10 negotiated drugs were $11 million, while costs for pre-existing drug inventory models ranged from $11 million for the physical inventory and physical replenishment models to $264 million for credit-based replenishment.

Figure 4. Interest costs for the eight 340B drug inventory and rebate models



Sensitivity analysis

This study incorporates a broad range of input parameters to model cash flow for different 340B drug delivery methods. To evaluate the robustness of the findings, we conducted a series of sensitivity analyses. For simplicity, the following sections focus on a single scenario: the 340B rebate model at entity-owned pharmacies. Sensitivity results at contract pharmacies were similar (data on file). Notably, interest costs for covered entities are smaller at contract pharmacy transactions, since it is the contract pharmacy that bears the cost of inventory.

Interest rate, 340B discount, and WAC

The interest cost varies linearly with respect to the interest rate, the 340B discount percentage, and the drug's WAC (Figure 5).

As the 340B discount increases (Figure 5, panel 2), interest costs under the rebate model decrease. This may seem counterintuitive, but it is due to the 340B rebate being paid at the same time or before the payment to the wholesaler. The larger the 340B discount, the larger the 340B rebate, and the smaller the negative cash balance on which the covered entity has to pay interest. If the 340B discount reaches 93.33%, the patient copay ($40) equals the 340B price of the drug ($600 WAC), and the cash balance is zero, meaning interest costs will be zero. The speed of rebate payments, as compared to payments coming from third-party payers, is a critical feature in understanding liquidity impact of a rebate model.

Rebate timeline

In the cash balance graphs, which assume a 10-day rebate timeline, consistent with HRSA rebate pilot requirements, the 340B rebate model cash graph exactly matches that

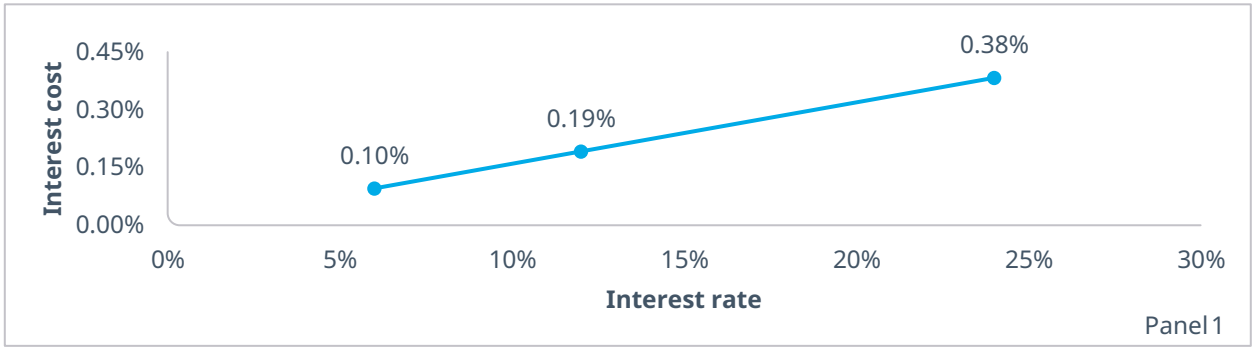
of the physical inventory and the dominant physical replenishment models at an entity-owned pharmacy. To assess the sensitivity of cash flow with respect to the timeline for issuing rebates, we tested two additional scenarios: immediate rebate payment when the drug is dispensed (0 days) and a 30-day delay, the latter being three times the length mandated by HRSA. The result is summarized in Figure 6, with even the 30-day timeline giving an interest cost of just $2.68 ($1.53 higher), or 0.45% of WAC.

Wholesaler payment timeline

Multiple interview respondents told us that wholesaler payment terms for hospitals and clinics are typically 30 days, which was the value we used for our cash flow analyses. However, shorter or longer timelines are sometimes used. For example, larger, high-volume hospitals may choose shorter timelines. To explore this further, we conducted sensitivity analyses for payment terms between 0 days (immediate payment) to 45 days, summarized in Figure 7.

For payment terms of 45 days or more, the provider's cash balance is never negative, hence interest costs are zero. For 15-day payment terms, interest costs are 0.66% of WAC, while for immediate payment, which is not common, interest costs are 1.16% of WAC. Regardless of what parameter we apply, the interest costs are either zero or quite small.

Figure 5. Sensitivity analyses for interest costs for the 340B rebate model at entity-owned pharmacies versus interest rate (panel 1), 340B discount (panel 2), and WAC (panel 3)



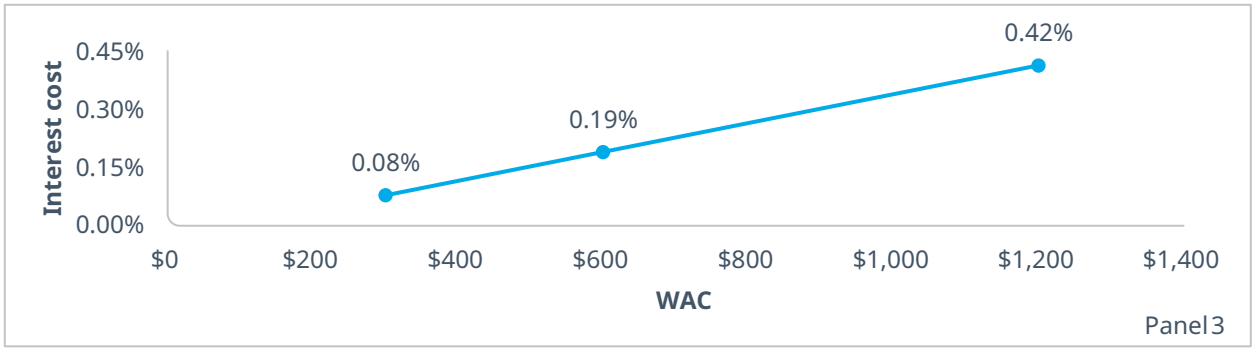


Figure 6. Sensitivity analysis for interest costs for the 340B rebate model at entity-owned pharmacies versus rebate timelines

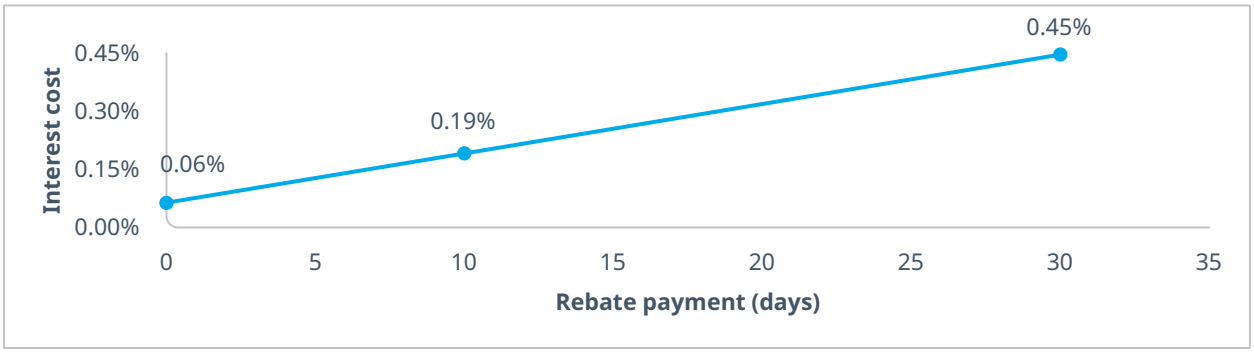
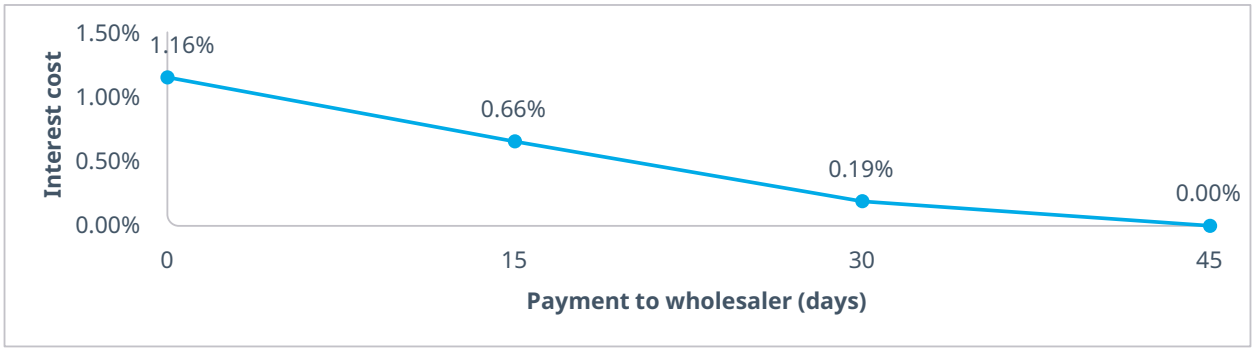


Figure 7. Sensitivity analysis for interest costs for the 340B rebate model at entity-owned pharmacies versus wholesaler payment timelines



Discussion

When HRSA announced on July 31, 2025, a pilot program to test the use of 340B rebates, it signaled a shift from upfront discounts to retrospective rebates.[45] In September, 2025, HRSA published over 1,000 stakeholder comments it received in response to its announcement,[46] many reenforcing the narrative that covered entities expect the 340B rebate model will be a severe financial burden.[47] On October 30, 2025 HRSA approved plans from eight manufacturers to participate in the pilot. Our findings do not support covered entities' stated concern regarding interest costs associated with the rebate model: estimated interest costs are small, even under conservative assumptions and extended timelines for rebate payments.

We created data-driven models for cash flow under eight different drug inventory and rebate mechanisms to quantify the financing (interest) costs hospitals and clinics incur when purchasing and dispensing drugs. These models encompassed both upfront discounts and rebates and included scenarios for entity-owned pharmacies and contract pharmacies.

For entity-owned pharmacies, the interest cost for the 340B rebate model using baseline assumptions, including the 10-day payment window mandated by HRSA, is 0.19% of the drug's list price — the same as for the physical inventory, physical replenishment, and presumptive credit models, and lower than credit-based replenishment (0.47%). Several assumptions we made were conservative, suggesting that actual costs associated with the 340B rebate model may be even lower.

For example, we applied a 12% interest rate on negative cash balances, assumed there was no interest income on positive balances, and used a 340B discount of 55%. For the 10 MFP drugs that are being used for the 340B pilot in 2026, the average 340B discount weighted on Part D sales is 89%, which, based on sensitivity analyses, would further lower interest costs. Furthermore, our estimates of interest costs for physical replenishment —

which multiple stakeholders told us is the predominant model used at entity-owned pharmacies — were too low, because we made the simplifying assumption that all purchases were at 340B prices. In reality, the initial purchase of drugs using physical replenishment must be at WAC.

For contract pharmacies, the interest cost for the rebate model was 0.03% of WAC, lower than both physical replenishment (0.14%) and credit-based replenishment (0.09%). Care must be taken comparing these interest cost estimates to those for entity-owned pharmacy scenarios, because 340B hospitals and clinics do not bear inventory costs for contract pharmacy dispenses and pay substantial fees for these services.[41]

Our estimates assume rebates are paid within 10 days of data submission, as required by HRSA.[1] While some stakeholders have questioned manufacturers' ability to meet this timeline,[45] HRSA has indicated that failure to comply could result in removal from the pilot as well as civil monetary penalties,[44] creating strong financial

incentives for timely payment. Even under less favorable scenarios for covered entities in which rebate timelines triple to 30 days, interest costs would rise from 0.19% to only 0.45% of WAC, which is still less than half of one percent of list price.

We also modeled shorter wholesaler payment terms (15 days), which may apply to high-volume, financially stable hospitals. Under this scenario, interest costs increased to 0.66%, still less than 1% of WAC.

To estimate the mix of drugs in the rebate pilot, we applied our model to the 10 drugs selected for Medicare Part D price negotiation in 2026. Assuming entity-owned pharmacy purchases equal to the $56.2 billion reported by CMS,[43] interest costs under the rebate model would total approximately $11 million, comparable to both physical inventory and physical replenishment, and substantially lower than credit-based replenishment.

Although our analysis demonstrates that the rebate model performs as well as physical inventory and physical replenishment, and better than credit-based replenishment, the most important observation is that interest costs are small. Across all eight models, estimated interest costs were less than 0.5% of the hypothetical drug's list price. Furthermore, we assumed an average inventory turnover of 15 days. For the 10 drugs in the rebate pilot, turnover may be shorter due to high utilization, which would further reduce financing costs. If manufacturers reduce WAC pricing in response to the implementation of Medicare price negotiation, direct to consumer distribution changes, and the TrumpRx initiative, as some industry analysts expect, our estimates of the 340B rebate model's interest costs will prove to be conservative.

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Appendix A: Assumption matrix for 340B cash flow

PARTIES:

340B covered entity

- Entity-owned pharmacy is considered part of the entity for cash flow purposes

Healthcare provider (HCP)

- Employed or affiliated with the entity

Patient

- Assumed to satisfy the 340B patient definition

Contract pharmacy
Wholesaler

- For the specific 340B drug
- Serves both the entity-owned pharmacy and the contract pharmacy

Rebate vendor
Third-party administrator (TPA)

- Only used for 340B transactions at the contract pharmacy

PBM or other payer

- Reimburses at WAC minus the patient's copay

PARAMETERS:

WAC: $600

340B discount at 55%: $330

Patient copay: $40

Annual interest rate for hospitals and clinics: 12%

Third-party administrator fee per prescription: $54

Contract pharmacy fee per prescription: $78

TIMELINE:

Average inventory turnover: 15 days

Drug distributor payment terms: 30 days

Time for entity to submit claims data for 340B rebate after dispense: 5 days

Time for rebate vendor to process and issue rebate after receiving claims data: 10 days[1]

Payer reimbursement after the drug is dispensed: 30 days

Time for credit-based replenishment after receiving claims data: 30 days

Time for physical replenishment after receiving claims data: 45 days

OTHER ASSUMPTIONS:

- All submitted rebate claims are paid
- Pharmacy dispensing fees were not considered, since they're common to all models
- For the physical replenishment model at entity-owned pharmacies, the first purchase at WAC is omitted for simplicity. Only subsequent purchases are modeled

Appendix B: Descriptions of the eight 340B drug inventory and rebate models

340B PHYSICAL INVENTORY MODEL AT ENTITY-OWNED PHARMACY

I. 15 days before it is dispensed, the entity orders the drug and receives it (Figure 2, panel 1, event 1)

II. A physician at the entity prescribes the drug to the patient between days -15 and 0

III. On day 0, the pharmacy dispenses the drug to the patient and collects a copay (Figure 2, panel 1, event 2)

IV. On day 15, the entity pays the wholesaler for the drug at the 340B price (Figure 2, panel 1, event 3)

V. On day 30, the payer reimburses the pharmacy at WAC minus the copay, and the covered entity recognizes the 340B revenue (Figure 2, panel 1, event 4)

340B PHYSICAL REPLENISHMENT MODEL AT ENTITY-OWNED PHARMACY

I. 15 days before it is dispensed, the entity receives the drug as neutral inventory

II. Between day -15 and day 0, a physician at the entity prescribes the drug to the patient

III. On day 0, the pharmacy dispenses the drug to the patient and collects a copay

IV. On day 5, the entity initiates a chargeback with the wholesaler

V. On day 15, the entity purchases the drug at the 340B price (the initial purchase is at WAC)

VI. On day 30, the payer reimburses the pharmacy at WAC minus the copay, and the covered entity recognizes the 340B revenue

VII. On day 50, the entity receives the replenished drug, which becomes neutral inventory

340B CREDIT REPLENISHMENT MODEL AT ENTITY-OWNED PHARMACY

I. 15 days before it is dispensed, the entity orders the drug and receives it

II. Between day -15 and day 0, a physician at the entity prescribes the drug to the patient

III. On day 0, the pharmacy dispenses the drug to the patient and collects a copay

IV. On day 5, the entity initiates a 340B credit chargeback with the wholesaler

V. On day 15, the entity pays the wholesaler for the drug at WAC

VI. On day 30, the payer reimburses the pharmacy at WAC minus the copay

VII. On day 35, the entity receives the WAC credit for drug, pays the 340B price to wholesaler, and recognizes the 340B revenue

340B REBATE MODEL AT ENTITY-OWNED PHARMACY

I. 15 days before it is dispensed, the entity orders the drug and receives it

II. Between day -15 and day 0, a physician at the entity prescribes the drug to the patient

III. On day 0, the pharmacy dispenses the drug to the patient and collects a copay

IV. On day 5, the entity submits claims data to the rebate vendor

V. On day 15, the entity pays the wholesaler for the drug at WAC

VI. On day 15, the entity receives the 340B rebate from rebate vendor

VII. On day 30, the payor reimburses the entity at WAC minus the copay, and the entity recognizes the 340B revenue

340B PRESUMPTIVE CREDIT MODEL AT ENTITY-OWNED PHARMACY

I. 15 days before it is dispensed, the entity orders the drug and receives it

II. Optionally, the entity submits purchase data to the rebate vendor

III. Seven days later, the entity receives the 340B rebate

IV. Between days -15 and 0, a physician at the entity prescribes the drug to the patient

V. On day 0, the pharmacy dispenses the drug to the patient and collects a copay

VI. On day 15, the entity pays the wholesaler for the drug at the 340B discount price

VII. On day 30, the payer reimburses the entity at WAC minus the copay. and the entity recognizes the 340B revenue

340B PHYSICAL REPLENISHMENT MODEL AT CONTRACT PHARMACY

I. Before day 0, a physician at the entity prescribes the drug to the patient

II. On day 0, the contract pharmacy dispenses the drug to the patient and collects a copay

III. On day 5, the entity pays the TPA fee, and orders replenished drug for the contract pharmacy from the wholesaler

IV. On day 50, the contract pharmacy receives the replenished drug and passes to the entity the payer reimbursement at WAC minus its fee; the entity pays the 340B price to the wholesaler and recognizes the 340B revenue. See Appendix A for further details about assumptions.

340B CREDIT REPLENISHMENT MODEL AT CONTRACT PHARMACY

I. Before day 0, a physician at the entity prescribes the drug to the patient

II. On day 0, the drug is dispensed to the patient at the contract pharmacy

III. On day 5, the entity pays the TPA fee, and initiates the 340B credit chargeback with the wholesaler

IV. On day 35, the contract pharmacy receives the WAC credit for drug and passes the entity the payer reimbursement at WAC minus its fee; the entity pays 340B price to wholesaler and recognizes the 340B revenue

340B REBATE MODEL AT CONTRACT PHARMACY

I. Before day 0, a physician at the entity prescribes the drug to the patient

II. On day 0, the drug is dispensed to the patient at the contract pharmacy

III. On day 5, the entity pays the TPA fee, and submits claim data to the rebate vendor

IV. On day 15, the 340B rebate is paid to the entity by the rebate vendor; the entity pays the contract pharmacy fee and recognizes the 340B revenue

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Acknowledgements

We thank Kepler Illich, Luke Greenwalt, and several anonymous reviewers for their helpful suggestions.

Funding

This study was supported by National Pharmaceutical Council, which reviewed the manuscript and provided feedback, but had no role in data collection, analysis, or the decision to publish. Full editorial control was retained by IQVIA.

Conflicts of interest

William Sarraille is a board member at Kalderos, Inc., which offers a rebate model solution. He was not compensated for his work on this publication from any source, and Kalderos did not review this publication or have any editorial control over this publication.

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