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US Pharma - Revenue Recognition- Gross to Net (GTN)

Satyendra Sahu

Chartered Accountant

Member of Institute of Chartered Accountants of India

185 Hasmpshire Drive, Plainsboro, NJ, United States

Tel: 1-732-666-4973 E-mail: sat28sahu@gmail.com

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Abstract

The United States pharmaceutical industry has a complex revenue recognition framework commonly referred to as Gross-to-Net (GTN) or Gross-to-Net (G2N). This framework entails substantial deductions from gross sales—recorded at Wholesale Acquisition Cost (WAC) or direct contract prices—to arrive at net revenue that accurately reflects realized income. GTN deductions can range from 10% to 80% of gross sales, which depends on many factors such as product type, market competition, customer class, and whether the drug is branded or generic. Despite of the fact that it has significant financial impact, GTN mechanics are rarely discussed outside specialized US pharmaceutical accounting circles, and this leads to an acute deficiency of knowledgeable professionals with the requisite expertise. This paper offers a structured and through exposition of the major GTN deduction categories: time-based discounts (cash/prompt-pay), distribution-channel deductions (chargebacks, admin fees, rebates, bill-backs, and shelf stock adjustments), Group Purchasing Organization (GPO) rebates, supply chain deductions (launch rebates, stocking allowances, failure-to-supply penalties, and sales returns), and government rebates (Medicaid and PHS 340B). The accounting treatment of each deduction under ASC 606 (Revenue from Contracts with Customers) is discussed, along with the associated estimation challenges / issues and financial reporting implications. The necessity for greater awareness of GTN concepts among accounting professionals is emphasized in the paper's conclusion, mainly in the countries like India that supply a substantial portion of the US generic drug market.

Keywords: Gross-to-net, Pharmaceutical revenue recognition, Chargeback, Medicaid rebate, ASC 606, US pharmaceutical industry, GTN deductions

1. Introduction

India has played a critical and important role in global pharmaceuticals and vaccine market. Often referred to as the "pharmacy of the world," India is the leading exporter of generic medicines, supplying about 20% of the global demand. In terms of global vaccine contributes about 60% of global supply. India ranked 3rd in volume supply and 11th in terms of value in the world in pharmaceutical supplies (Indian Brand Equity Foundation [IBEF], 2024). India's pharmaceutical industry has a significant presence in the production of both generic drugs and APIs, backed by its skilled workforce, cost-efficient production, and a regulatory environment favoring pharmaceutical exports (Priya & Dr. Anchal, 2024). According to a study conducted by the Confederation of Indian Industry (CII) and KPMG in April 2020, 90% of all prescriptions are filled by generic drugs, and 1 out of every 3 pills is produced by Indian manufacturers (Sur, 2020).

Despite this large-scale participation in the US market, GTN revenue recognition remains poorly understood by many practitioners outside the US. In the US pharmaceutical industry, "gross" to "net" (GTN) revenue recognition involves several specific deductions due to the nature of the industry's pricing, regulatory framework, and distribution channels. Gross revenue reflects the total sales at Wholesale Acquisition Cost (WAC) price or Direct contract price, but this often doesn't capture the final, recognized revenue due to discounts, allowances, and rebates required by different stakeholders. These adjustments or deductions from gross sales are important for accurate revenue recognition and financial reporting, as they provide the real income after discounts, rebates, returns, and other concessions made to customers and payers. According to Fein (2025), total value of pharmaceutical products gross to net deductions for year 2024 stands at $356 billions only for branded medicines. For example, Viatris has published SEC 10-K report for year 2025 which includes reconciliation of gross sales to net sales. Viatris has disclosed that average GTN deductions were in the range of 39%-41% for years 2023 to 2025 (Viatris Inc., 2026).

Due to changes in regulations and constantly changing market strategies, the situation has only gotten more complicated in recent years. This emphasizes the significance of gross to net (GTN) procedures, which determine the actual net price, supply forecast inputs, and support the creation of pricing strategies. Despite the significance of GTN calculations, many pharmaceutical companies have lagged behind in monitoring this vital metric because each manufacturer's calculations are different and are influenced by a wide range of variables and inputs that can change over time. Inaccurate GTN models and computations can result in net revenue misstatements, which have a direct impact on manufacturers' bottom lines (KPMG, 2024).

Given the importance of revenue recognition, it is crucial to understand gross to net concept because of significant deductions which could range from 10% to 80% depending on several factors. Such as product, market competition, customer, shortages, brand or generic etc. (Matsuk, 2011). The adoption of ASC 606 in 2018 formalized the treatment of these deductions as variable consideration, requiring a more systematic and disclosure-oriented style to revenue estimation in the pharmaceutical sector (PwC, 2024). This paper aims to

explain and clarify the GTN framework by providing a structured analysis of each deduction category, its accounting treatment, and the associated operational challenges—with a particular emphasis on raising awareness among Indian accounting professionals who serve this sector.

2. The Gross-to-Net (GTN) Framework

GTN/G2N is abbreviation used for transition from gross sales to net sales in pharmaceutical revenue accounting. Mathematically, in simple words, it is written as below;

Net sales =Gross sales - Deductions

Where gross sales are the multiplication of number of units sold at WAC price of direct contract price. Deductions refers to several deductions offered by seller to different stake holders along the marketing value chain.

Well, it appears too easy on the face of it, however due to complex structure of US pharma market managing deductions is one of the biggest challenges. Starting from budgeting, contracting, compliance, claim processing, deduction accruals, cash flow impact, accounts receivables management and finally reporting (Matsuk, 2011).

There are several types of deductions exists in pharmaceutical market. Table 1 below provides the GTN deduction categories that are primarily related to generic market.

Table 1. Classification of GTN Deductions in the US Pharmaceutical Industry

Sr. No.	Deduction group	Deductions
1	Time based	Prompt pay or cash discounts if paid within certain days.
2	Distribution channel based	a. Chargeback b. Admin fee c. Rebates d. Third party rebates e. Bill back or indirect to direct f. Shelf stock adjustment
3	GPO based	a. Indirect Rebates
4	Supply chain related	a. Product launch or relaunch rebates b. Stocking allowance c. Failure to supply / service level penalty d. Sales return and shortages
5	Government rebates	Medicaid and PHS rebates etc.

3. GTN Deduction Categories

3.1 Time-Based Deductions: Cash and Prompt-Pay Discounts

Time based deduction is primarily cash discount or prompt pay. Cash discounts are paid by seller to buyer depending on the contracted credit term and rate. For example, if agreed credit term is 2/60 net 61 which means 2% cash discount is provided if invoice is paid within 60 days and full payment due by 61 days. There are conventional industry discounts which includes cash discount or prompt payment also as noted by Nugent & Clayton (2023).

Cash discount is presented as reduction from gross sales in financial statements. Accruals needs to be created on gross sales based on contractual obligations. Accruals are adjusted based on the actual payment behavior. Cash discount accrual needs to be validated financial statement date.

3.2 Distribution Channel-Based Deductions

Distribution channel-based deductions are primarily paid to wholesalers, retail pharmacies, and larger pharmacy chains. They represent the most complex and financially significant segment of GTN adjustments, comprising several distinct sub-types.

3.2.1 Chargebacks

Chargeback is one of the most crucial deductions. In majority of the cases chargeback contributes to more than 50% of all the deductions. They are a basic mechanism through which the US pharmaceutical distribution system operates, with wholesalers invoicing manufacturers to recover the difference between WAC and contracted prices (Patel et al., 2024). A chargeback in US pharmaceutical market refers to a system between manufacturers and wholesalers to adjust the pricing based on already contracted price (Weinstein & Schulman, 2020). These contracts help manufacturer to sale the products at agreed price lower than WAC by reimbursement of difference in WAC and contracted price. This mechanism of transaction ensures the confidentiality of the contract price (Dabora et al., 2017).

Let's us understand how this chargeback system functions. Below is the mathematical expression for chargeback.

$$\text{Chargeback} = (\text{WAC} - \text{Contract price}) \times \text{Units Sold by Wholesaler}$$

Where WAC stands for wholesale acquisition cost, contract price reference to 1) contracted price with wholesalers for source contract or 2) contracted price with retailers/pharmacies/GPOs, Unit sold refers to units sold by wholesaler. Contracted price is generally lower than the WAC. Chargeback becomes payable only when wholesaler sells the product. If the product stays as inventory with wholesaler, then only accruals is maintained.

For example, manufacturer sells the product to wholesaler at $100. Wholesaler sells the products to retail pharmacy at the contracted price $70 agreed between manufacturer and retail pharmacy. In this case manufacturer will pay $30 ($100- $70) as chargeback to wholesaler (Newhouse & Berndt, 2010).

Why chargeback exists? There are several strategic purposes which includes the following: 1) customer continue to receive the product at agreed contract price and does not have impact due to WAC price change. 2) Allows manufacturer to provide discounts based on contract price without changing the WAC price. 3) Customer can buy the product at any wholesale at the contracted price and 4) Maintains the confidentiality of the contract price by way of direct and indirect contract price.

Chargebacks are usually recorded in accounting as a decrease in gross sales. An allowance for

anticipated chargebacks is made when sales are recorded at the WAC price, and this amount is periodically adjusted to reflect actual reimbursements. This is in line with accounting standards like ASC 606, which mandate that revenue be reported at the anticipated amount received.

There are several operational challenges in chargeback system. 1) Processing chargeback involves significant paperwork, reconciliations, time and efforts from both manufacturers and customers (Weinstein & Schulman, 2020). 2) Huge amount of data processing is required for chargeback which leads to data entry errors, duplicates and mismatch in contract terms which leads to disputes. 3) Delay in processing chargebacks could affect cashflows for both manufacturer and customers.

WilkinGuttenplan (2021) notes that chargebacks are consistently the largest single reduction in the gross-to-net calculation and emphasizes that unmatched or unreconciled chargebacks can materially impair the accuracy of accounts receivable and net sales reported in financial statements. The Healthcare Distribution Alliance (HDA Research Foundation, 2018) further identified pricing eligibility, date discrepancies, and contract mismatches as the most prevalent sources of chargeback disputes in the industry. Organizational changes such as acquisitions or mergers, and product-line divestitures further compound chargeback processing complexity, often resulting in elevated rejection rates in the post-transaction period (Rutgers Center for Supply Chain Management & Healthcare Distribution Alliance, 2018).

3.2.2 Administration Fees

The term "admin fees" refers to the money that manufacturers pay to wholesalers or group purchasing organizations (GPOs) in exchange for particular services including marketing assistance, data administration, and product delivery. By paying middlemen for data reporting and logistical support, these fees aid in the seamless running of the supply chain.

Manufacturers pay wholesalers or GPOs an administration charge, often ranging from 1% to 3% of product sales. This payment rewards middlemen for handling inventories, reporting sales data, and allowing product access to final consumers (Kwanghyuk, 2019).

These fees are typically outlined in agreements between manufacturers and middlemen, along with precise instructions for the services to be rendered and how the charge is determined. For instance, GPOs bargain with manufacturers on behalf of medical facilities, and they receive administrative fees from the sales proceeds of these agreements (Sood et al., 2017).

Admin fees cover a range of services, including data analysis, market intelligence, end-customer relationship management, and logistical management. This charge ensures that wholesalers and GPOs have the means to effectively manage the distribution network.

Admin fees are typically reported in accounting as a selling expense for the manufacturer and as revenue for the wholesaler or GPO. Because these fees have a significant effect on income and expenses, they must be included in financial reporting. However, when administrative fees are directly related to the sale of medicines, they should be reported as part of the

contract costs under ASC 606 (Revenue from Contracts with Customers) (Dabora et al., 2017). Accruals are created at the time of sales and validated at each financial statement date. Expression to compute admin fee

For % case:

$$\textbf{Admin fee} = \textbf{(CP or WAC)} \times \textbf{units sold} \times \textbf{rate \%}$$

For per unit case:

$$\textbf{Admin fee} = \textbf{number of units sold} \times \textbf{rate per unit}$$

Where, CP or WAC refers to contract price or Wholesale acquisition cost based on the agreed terms. Number of units sold by wholesaler. Rate will be either % or per unit.

There is substantial debate regarding whether admin fees could encourage wholesalers or GPOs to prioritize particular manufacturers or goods over others, which could affect the dynamics of a competitive market (Kwanghyuk, 2019). According to critics, administrative fees are not always clear, which might mask the actual cost of medications and have an impact on healthcare providers' overall prices (Weinstein & Schulman, 2020).

3.2.3 Rebates and Third-Party Rebates

Pharmaceutical rebates are post-sale discounts or reimbursements given by manufacturers to wholesalers or third parties (who does not buy directly). Rebates, which are usually negotiated as part of supply purchase agreements, are dependent on the quantity of medications sold or certain usage requirements. Rebates can be 1) based on regular sales, 2) volume based given when certain level of volume is achieved & 3) condition based given when defined criteria meets. Third party rebate is a terminology used by wholesalers to identify that these rebates belong to product sold outside their source contracts. Processing and computation of the rebates is similar to admin fee.

For % case:

$$\textbf{Rebate} = \textbf{(CP or WAC)} \times \textbf{rate \%}$$

For per unit case:

$$\textbf{Rebate} = \textbf{number of units sold} \times \textbf{rate per unit}$$

Where, CP or WAC refers to contract price or Wholesale acquisition cost based on the agreed terms. Number of units sold by wholesaler. Rate will be either % or per unit.

Rebates are usually documented in accounting as decreases in manufacturers' revenue. Manufacturers estimate and subtract predicted rebates at the time of sales recognition, frequently modifying these estimates over time to account for actual rebate payments.

Revenue Recognition (ASC 606): Manufacturers are required to record rebates as variable consideration under ASC 606. This entails calculating rebate amounts using past data and modifying them in light of new information.

3.2.4 Bill-Back / Indirect-to-Direct Rebates

Billback or indirect to direct rebates are often provided by manufacturers to bigger retail customers who want to buy directly from manufacturer. In addition to direct purchase, this contract provides option to buy via wholesale chain. In order to keep the pricing confidential, an indirect pricing is created. Let's see the below example;

Manufacturer sells product at WAC $100 to wholesalers. Customer A has direct price of $40 and indirect price $ 70. When Customer A will buy from manufacturer at $40. However, customer buy the product at $70 from wholesalers. In such case, customer claims billback rebate ($70- $40= $30). It can be expressed as below

Billback = indirect price - direct price

According to ASC 606, manufacturers are required to treat billbacks as variable consideration and hence it will be reduced from gross sales as part of financial statements. Manufacturer need to accrue the liability for billback upfront at the time of sales and adjust the accruals based on the actuals.

3.2.5 Shelf Stock Adjustments

Whenever a manufacturer changes or reduces product price, wholesalers, distributors, or retailers claims a credit for amount reduced in price for the inventory in stock. This type of claim is known as the Shelf Stock Adjustment (SSA).

Purpose of SSA is to provide support to intermediaries for financial losses that they could get from reduction in the price.

SSA = Price change × Customer inventory

Where inventory means inventory lying with customer on the date of price change. Price change refers to the difference in existing price and changed price.

For example: a wholesaler holds 2000 units of product at the rate of $30 per unit. Now manufacturer reduced the price to $25. In this case manufacturer will provide a shelf stock adjustment of $5 per unit for 2000 units (total value $10,000).

SSA is recorded as reduction from gross revenue. Accruals for SSA claims are created as and when the event occurs and adjusted based on the actual claims.

3.3 Group Purchasing Organization (GPO) Based Deductions

In the pharmaceutical sector, Group Purchasing Organizations (GPOs) negotiate pricing discounts and rebates on behalf of healthcare providers such as hospitals, clinics, retail pharmacies and long-term care institutions —by leveraging collective purchasing volume (Sood et al., 2017). GPOs use their member organizations' collective purchasing power to gain rebates and compensation from manufacturers, often in the form of discounts on pharmaceuticals and medical equipment. This agreement allows healthcare providers to purchase products at lower prices, while manufacturers get wider distribution and higher sales volumes. These rebates are called indirect rebates as it is paid to GPO and not the

members.

Manufacturers offer GPOs financial incentives known as GPO rebates, which are contingent on the parameters of the negotiated contract. Based on the quantity of goods that healthcare facilities under GPO contract, manufacturers return a portion of the sales proceeds to the GPO or its members in these rebates, which are frequently set up as post-sale discounts. In addition to rebates, manufacturer also pay admin fee to GPOs for managing contracts, facilitating distribution, providing data analysis, and supporting other administrative functions.

Accounting for GPO based deductions will be similar to admin fee and rebates as discussed above in Sections 3.2.2 and 3.2.3.

3.4 Supply Chain-Related Deductions

Supply chain related deduction includes new product launch rebates, stocking allowance, failure to supply / service level penalties and sales returns. All of these are discussed in brief as below.

3.4.1 New Product Launch / Relaunch Rebates and Stocking Allowances

As name suggests, new product launch rebates are offered by manufacturer to wholesalers/retail pharmacies at the time of the launch of the new product. Similarly, relaunch rebates are offered at the time of relaunch. Sometimes manufactures assign a minimum volume buy condition for such kinds of rebates. Stocking allowance is a form of incentive provided by manufacturer to wholesalers / retail pharmacies to encourage them to carry and promote new or relaunched products.

Accounting is similar to admin fee and rebates as discussed above. Accruals for such rebates are required at the time of the sales and becomes payable as per the credit term. It is not dependent on the secondary sale from wholesaler. Drawback is that such rebates could lead to overstocking which may lead to sales return.

3.4.2 Failure-to-Supply / Service Level Penalties

Pharmaceutical suppliers, like manufacturers or distributors, are subject to contractual provisions known as Failure to Supply (FTS) or Service Level Penalties, which impose monetary fines or other repercussions in the event that they do not supply goods as promised (Weinstein & Schulman, 2020). These fines are necessary to maintain a steady and dependable supply chain, particularly for vital drugs where shortages could have a major effect on patient care and operational procedures.

Suppliers promise to supply products in predetermined amounts on predetermined dates. Penalties might be imposed if they are unable to fulfill their obligations. These clauses are frequently found in pharmaceutical contracts to safeguard distributors, healthcare providers, and other stakeholders who depend on the ongoing availability of the product (Weinstein & Schulman, 2020).

Some contracts contain exclusions for circumstances beyond the supplier's control, such as

natural disasters or regulatory constraints, commonly known as force majeure occurrences, even if failure to supply penalties apply to the majority of delivery failures.

The overall transaction price and revenue recognition may be impacted by FTS penalties under ASC 606, especially if the fines are significant or frequent. When calculating the transaction price for the contract, suppliers must take any penalties into consideration (Dabora et al., 2017).

3.4.3 Sales Returns

Products returned to the manufacturer by consumers (wholesalers, pharmacies, or healthcare providers) are referred to as sales returns. A number of things, such as defective goods, expired products, overstocked inventory, or product recall might cause this. Financial reporting, inventory control, and revenue are all significantly impacted by sales returns.

Sales purchase agreements between manufacturers and customers typically include provisions for sales return policies. These guidelines specify the time range, permissible returns, and any associated fines or restocking costs.

In financial reporting, sales returns are accounted as an estimated return reserve at the time of sale, which is adjusted based on actual return data. Manufacturers are required by ASC 606 to estimate future sales returns and record them as a decrease in revenue. This projection is predicated on market trends, customer contracts, and historical return rates. Estimating the sales return is complex process due to 1) non availability of batch level inventory data with wholesaler, 2) no information about inventory lying with retail pharmacies and 3) shelf life of each product and SKU.

3.5 Government Rebates

Government rebates primarily include Medicaid and PHS (public health service) rebates. In the U.S. pharmaceutical sector, government rebates are important pricing and rebate mechanisms that lower the cost of pharmaceuticals for public health programs. Pharmaceutical companies are required by law to participate in these rebate programs if they want Medicaid and PHS to cover their medications.

The Medicaid Drug Rebate Program (MDRP) was established in 1990 under the Omnibus Budget Reconciliation Act. This program requires drug manufacturers to provide rebates to state Medicaid programs to help offset the cost of outpatient drugs. In 1992, the Public Health Service (PHS) 340B Drug Pricing Program was created to enable specific healthcare providers (referred to as "covered entities") to buy medications at considerably lower costs. The program has grown significantly; by 2023, total 340B drug purchases had reached approximately US$66.3 billion, making it the second-largest drug-purchasing program in the United States (Sood & Bhattacharya, 2025). A scoping review by Knox et al. (2023) confirmed that the program benefits hospitals, clinics, pharmacies, and patients, while imposing material revenue costs on pharmaceutical manufacturers.

Medicaid rebate computation expression:

Medicaid rebate= AMP × Applicable rebate percentage

Where AMP stands for Average Manufacturer Price. AMP is the average price paid to the manufacturer for the drug in the U.S. by wholesalers for drugs distributed to the retail pharmacy class of trade, excluding "customary prompt pay discounts extended to wholesalers" (Centers for Medicare & Medicaid Services [CMS], 2026).

For most brand-name drugs, the statutory rebate is the greater of 13% (for generic) or 23.1% (for brand) of AMP or the difference between AMP and Best Price—effectively tying Medicaid to the lowest market price offered by the manufacturer (Kaiser Family Foundation [KFF], 2023).

The "best price" of a medicine, as defined by the US Medicaid statute, is "the lowest price available from the manufacturer during the rebate period to any wholesaler, retailer, provider, health maintenance organization, nonprofit entity, or governmental entity within the United States," and this price is inclusive of cash discounts, volume discounts, and rebates. Prices available to 340B entities, state-owned facilities or under a state pharmaceutical assistance program, the federal government, including the Veterans Administration, the Department of Defense, or Medicare Part D plan sponsors, and nonprofit organizations are among the exceptions that were added after the program's initial launch (Hayes, 2019).

The full computation of AMP, Best Price, and PHS ceiling price is highly complex and beyond the scope of this paper; however, empirical research demonstrates that Medicaid net prices can diverge significantly from gross prices, with best-price discounts reducing effective Medicaid drug prices by up to 54% for individual products (Clemans-Cope et al., 2023).

Medicaid and 340B rebates are regarded as variable consideration under ASC 606 (Revenue Recognition), which requires manufacturers to estimate and subtract anticipated rebates from their revenue at the point of sale. Since these refunds significantly affect net sales, precise estimates are important and necessary.

4. Discussion: Accounting, Compliance, and Strategic Implications

The GTN framework sits at the joint section among financial accounting, contract management, and governing compliance. From an accounting perspective, ASC 606's variable consideration model requires entities to apply either the expected value method (probability-weighted average) or the most likely amount or value technique to estimate deduction, based on which better predicts the consideration the entity will ultimately be entitled to receive. The selected procedure must be applied in a consistent way to all similar deduction types and disclosed in financial statement notes.

A recurring problems or issues across all deduction categories is the estimation of accruals with sufficient accuracy to avoid material misstatements. Pharmaceutical manufacturers are required to navigate the complex regulatory framework, including Medicaid, Medicare, and 340B reporting requirements, each with different rules that directly affect GTN calculations (Baker Tilly, 2023). To overcome estimation challenges, manufacturers mostly rely on

specific data analytics models that incorporate sales trends, patient prescribing habits, inventory levels, and dispensing data, allowing more accurate prediction and deduction estimation (Baker Tilly, 2023). Under EY guidance on ASC 606 application for life sciences entities, the expected value method is frequently preferred for high-volume, low-unit-value deductions such as chargebacks and rebates because of the availability of large historical datasets (Ernst & Young, 2020). For Medicaid rebates, complexity increases from the multi-step computation of AMP and Best Price, which can be subject to government audit and retrospective adjustments spanning prior quarters (Centers for Medicare & Medicaid Services [CMS], 2024). For sales returns, the lack of downstream inventory visibility makes estimation inherently uncertain.

From the strategic viewpoint, the magnitude of GTN deductions directly determines a manufacturer's pricing power and net revenue realization. Rebates and discounts provided within the supply chain decrease transparency of actual selling costs, as the invoiced price diverges from the effective payment ultimately made back to the buyer (Lopes et al., 2021). In generic pharmaceutical, market is driven by intense price competition, GTN deductions—particularly chargebacks—can erode gross margins dramatically. Effective GTN management, therefore, requires strong data infrastructure, experienced accounting staff, and tightly governed contracting processes.

The non-availability of professionals with GTN expertise, mainly in India where a large proportion of US generic drug manufacturers are based, represents a significant organizational risk. As Indian pharmaceutical organizations continue to increase their US market presence, investment in GTN-specific training and capacity building becomes operationally crucial.

5. Conclusion

Pharmaceutical industry's GTN framework and different rebates and allowance structure play an important role in monitoring pricing, revenue, and medicine availability across the healthcare system. These GTN deductions ranges from simple cash discounts to complex government rebate programs and it could range from 10% to 80% of the gross revenue. There by it is important to accurate estimate and accounting treatment as a matter of substantial financial significance.

This paper has provided an overview of the five major GTN deduction categories: time-based discounts, distribution-channel based deductions, GPO-based rebates, supply chain deductions and government rebates. For each category, this paper discussed the economic rationale, mathematical framework, accounting treatment under ASC 606, and key operational challenges.

This mechanism, which include launch incentives, third-party rebates, Medicaid and PHS rebates, and failure-to-supply penalties, are envisioned to strike a balance between the financial requirements of pharmaceutical companies and the demand of patients and healthcare providers to decrease costs. Pharmaceutical companies need to manage GTN adjustments, rebates, and contractual penalties in order to maintain their financial feasibility

and fulfill their commitments to low-priced access and public health. Adjusting to the shifting landscape of pharmaceutical pricing and regulation will require constant openness, compliance, and data-driven forecasting to make sure that these systems effectively meet the demands of all stakeholders. Managing GTN is complicated and complex process and requires skilled workers.

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Competing interests

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References

Baker Tilly. (2023). *The challenges of gross-to-net functions in life sciences.* Baker Tilly Insights. [Online] Available: https://www.bakertilly.com/insights/challenges-gross-to-net-functions-life-sciences

Centers for Medicare & Medicaid Services (CMS). (2024). *Medicaid Drug Rebate Program.* U.S. Department of Health and Human Services. [Online] Available: https://www.medicaid.gov/medicaid/prescription-drugs/medicaid-drug-rebate-program

Centers for Medicare & Medicaid Services (CMS). (March 2026). *Part B Drug Payment Limits Overview.* [Online] Available: https://www.cms.gov/files/document/part-b-drug-payment-limits-overview.pdf

Clemans-Cope, L., Epstein, M., Banthin, J., Kesselheim, A. S., & Hwang, T. J. (2023). Estimates of Medicaid and non-Medicaid net prices of top-selling brand-name drugs incorporating best price rebates, 2015 to 2019. *JAMA Health Forum, 4*(1), e225012. https://doi.org/10.1001/jamahealthforum.2022.5012

Dabora, M. C., Turaga, N., & Schulman, K. A. (2017). Financing and distribution of pharmaceuticals in the United States. *JAMA, 318*(1), 21-22.

Fein A. J. (2025 December 12). *Gross-to-net bubble hits $356B in 2024 — but growth slows to 10-year low.* Drug Channels Institute. [Online] Available: https://www.drugchannels.net/2025/12/gross-to-net-bubble-hits-356b-in.html

Hayes, Tara O'Neill. (2019, February 7). *Primer: The Medicaid drug rebate program.* American Action Forum. [Online] Available: https://www.americanactionforum.org/research/primer-the-medicaid-drug-rebate-program/

Healthcare Distribution Alliance (HDA) Research Foundation. (2018). *Change management: Best practices in contract and chargeback administration*. HDA Research Foundation White Paper. [Online] Available: https://www.hda.org

India Brand Equity Foundation (IBEF). (2024). *Pharmaceutical exports from India*. Ministry of Commerce and Industry, Government of India. [Online] Available: https://www.ibef.org/exports/pharmaceutical-exports-from-india

Kaiser Family Foundation (KFF). (2023). *5 key facts about Medicaid prescription drugs*. KFF. [Online] Available: https://www.kff.org/medicaid/5-key-facts-about-medicaid-prescription-drugs/

Knox, R. P., Wang, J., Feldman, W. B., Kesselheim, A. S., & Sarpatwari, A. (2023). Outcomes of the 340B Drug Pricing Program: A scoping review. *JAMA Health Forum, 4*(11), e233716. https://doi.org/10.1001/jamahealthforum.2023.3716

KPMG LLP. (2024). *Life sciences gross to net: Getting it right [White paper].* [Online] Available: https://kpmg.com/kpmg-us/content/dam/kpmg/pdf/2024/life-sciences-gross-to-net-getting-it-r

ight.pdf

Kwanghyuk (David) Yoo. (2019). *Pharmacy Benefit Managers and Generic Pharmaceuticals Pricing Conspiracy: Unveiling Lock-In Mechanisms, Structural Shortcomings and Antitrust Evidence*. SSRN, 81. [Online] Available: https://ssrn.com/abstract=3379068

Matsuk, R. (2011, October 15). *Getting a Better Business Picture Through Gross-to-Net Analytics.* [Online] Available: https://www.pharmaceuticalcommerce.com/view/getting-a-better-business-picture-through-gross-to-net-analytics

Neeraj Sood, Tiffany Shih, Karen Van Nuys, & Dana Goldman. (2017, June). *The flow of money through the pharmaceutical distribution system.* Schaeffer Center White Paper Series. https://doi.org/10.25549/hypg-r802

Newhouse, J. P., & Berndt, E. R. (2010). *Pricing and reimbursement in U.S. pharmaceutical markets.* National Bureau of Economic Research Working Paper Series. [Online] Available: http://www.nber.org/papers/w16297

Nugent, T. J., & Clayton, J. K. (2023 November 21). *The challenges of gross-to-net functions in life sciences*. Baker Tilly. [Online] Available: https://www.bakertilly.com/insights/challenges-gross-to-net-functions-life-sciences

Priya, A., & Dr. Anchal. (2024, January 6). *Global Healthcare: The Journey of Indian Generic Medicines to Worldwide Markets. Retrieved from Invimeds.* [Online] Available: https://invimeds.com/updates/global-healthcare-the-journey-of-indian-generic-medicines-to-worldwide-markets/

PwC. (2024). *US GAAP revenue recognition for pharmaceutical companies (Effective January 1, 2024)*. PricewaterhouseCoopers LLP. [Online] Available: https://www.pwc.com/us/en/industries/health-industries/library/gaap-issues-solutions-pharma/revenue-recognition.html

Sood, N., & Bhattacharya, A. (2025). *Cui bono? Misaligned incentives in the 340B program.* USC Schaeffer Center for Health Policy and Economics. [Online] Available: https://schaeffer.usc.edu/research/misaligned-incentives-340b/

Sur, P. (2020, May 16). *The coronavirus exposed the US' reliance on India for generic drugs. But that supply chain is ultimately controlled by China. Retrieved from CNN*. [Online] Available: https://www.cnn.com/2020/05/16/business-india/india-pharma-us-china-supply-china-intl-hnk/index.html

Viatris Inc. (2026). *Annual report (Form 10-K) for the year ended December 31 2025. U.S. Securities and Exchange Commission*. [Online] Available: https://www.sec.gov/Archives/edgar/data/1792044/000179204426000013/R35.htm

Weinstein, E., & Schulman, K. A. (2020, September). Exploring payments in the U.S. pharmaceutical market from 2011 to 2019: Update on pharmacy benefit manager impact.

American Heart Journal, 277, 107-110. https://doi.org/10.1016/j.ahj.2020.06.017

WilkinGuttenplan. (2021, December 27). *An introduction to drug pricing terms. WilkinGuttenplan Life Sciences Advisory.* [Online] Available: https://www.wgcpas.com/an-introduction-to-drug-pricing-terms/