

## *Policy Brief*

# *The Impact on Patient Health of Most-Favored-Nation Pricing of Already Marketed Drugs*

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September 27, 2025

### **Abstract**

This policy brief evaluates the potential impact of Most Favored Nation (MFN) pricing on pharmaceutical innovation and patient health. We analyze MFN pricing being imposed in Medicare and Medicaid, requiring U.S. prices for already launched drugs to match the lowest prices observed among a group of peer countries. Assuming that market exits for already marketed drugs are not feasible, we estimate that applying the MFN pricing policy to existing drugs in Medicare and Medicaid would reduce U.S. pharmaceutical revenues by 49%. Globally, we find that pharmaceutical revenues are projected to decline by 31%, leading to a nearly 48% reduction in R&D spending. If persistent over a 10-year horizon, this shortfall is expected to result in the loss of 210 new drug approvals, together with 290 post-approval indications, resulting in a combined loss of 500 drugs, or 50 per year. This large cut in innovation we find is associated with a loss of 516 million life-years, corresponding to approximately 6.6 million lives lost worldwide. This estimation adopts a conservative assumption that MFN pricing impacts are confined to Medicare and Medicaid, without assuming spillovers into other markets from other likely sources. We also discuss how future strategic responses for newly launched drugs by manufacturers would be altered by the MFN policy, such as limiting entry into low-price countries to preserve US prices. If such strategies were extensively used, they could also counterintuitively lead to increased foreign free riding on the US, contrary to the stated goal of the policy.

## **Section 1: Introduction**

This policy brief analyzes the potential revenue loss and subsequent impacts on innovation and patient health due to the most favored nation (MFN) pricing of already marketed drugs. MFN pricing requires that U.S. prices for drugs be capped at the lowest prices among a set of reference countries. While such policy proposals aim to reduce domestic drug spending, they will also have impacts that include losses in revenue, pharmaceutical innovation, and consequently, patient health.

We focus on branded drugs that have already been launched in international markets. For these drugs, it would not be feasible in many cases for pharmaceutical firms to pull out of foreign markets, which could potentially harm patients by interrupting treatment, and it would not be legally possible for them to raise their prices to avoid MFN pricing. As such, the prices of the drugs will decrease dramatically if their price in U.S. markets is determined by the lowest prices in the reference countries. The resulting U.S. price reductions will lead to large losses in global prescription drug revenues, cuts in research and development (R&D), fewer new drug innovations, and poorer patient health outcomes.

Our analysis evaluates the hypothetical revenue losses from MFN if applied to Medicare and Medicaid and their downstream effects. We find that MFN would:

- Reduce U.S. prescription drug revenue by 49%, equivalent to a contraction of 0.78% in the national GDP and reduce global prescription drug revenue by 31%.
- Reduce global R&D spending by 48%.
- Result in the loss of approximately 21 new drugs per year with an additional 29 post-approval indications. If continued over time, this amounts to the loss of about 210 new drugs over 10 years, together with a decline of 290 post-approval indications—for a total treatment loss of roughly 500 drugs.
- Lead to an estimated 658 thousand lives or 51.57 million life-years lost annually due to fewer pharmaceutical advances being developed, highlighting the potential harm to long-term health associated with MFN pricing. Over 10 years, the health loss will be about 516 million life-years or 6.6 million lives.
- Increase health expenditure in the long run from a lack of drug innovation and ultimately offset any short-run savings from MFN pricing.

For drugs that have not yet been launched, pharmaceutical firms face a trade-off of entering a foreign market at the cost of triggering a lower reference price or forgoing that market to seek to preserve a market price for new drugs in the U.S. The former option offers the firms a higher sales volume at a lower price, while the latter concentrates volume in the U.S. market at a potentially higher unit price. Given that almost three-quarters of global earnings are from the U.S. market, firms may find it advantageous not to enter foreign markets that bring down the U.S. price. In theory, if such strategies were extensively used, they could potentially lead to lower price reductions in the U.S., but overall reduced global revenues and innovation, and increased foreign free riding. However, if policymakers are intent on controlling pharmaceutical costs in the U.S., they may identify alternative policy approaches beyond MFN to achieve lower prices for drugs not launched in foreign countries – exacerbating the impact on industry R&D and patient health.

## **Section 2: Innovation and Price Discrimination**

Price discrimination occurs when a monopolist charges different prices for the same good or service to distinct buyer groups whose demand differs. By setting higher prices in markets with inelastic demand and lower prices where demand is more elastic, the firm can obtain larger earnings than under uniform pricing. In the extreme case of perfect price discrimination, the monopolist charges each purchaser exactly their maximum willingness to pay and obtain maximum earnings.

**In international pharmaceutical markets, such price discrimination is theoretically efficient and even socially desirable.** Due to heterogeneity in per-capita income, insurance structure, and institutional structures, by charging higher prices in wealthier countries and lower prices in price-sensitive regions—while preventing arbitrage through regulation or contracts—pharmaceutical firms can both raise earnings and, at the same time, not exclude poorer countries through price discrimination. These enhanced earnings enable greater R&D investment, raising the expected returns on clinical development and leading to more drug approvals and improved health outcomes globally.

However, this efficient outcome depends on countries accepting differentiated pricing that reflects their ability and willingness to pay. In practice, this condition is often unmet. Many high-income countries implement government-imposed pricing mechanisms such as international reference pricing, outdated cost-effectiveness thresholds, mandatory discounts, and lengthy reimbursement delays, all of which suppress prices below market value. These practices allow governments to access innovative medicines developed through U.S.-funded research while contributing disproportionately little to the cost of that innovation. As a result, these countries effectively “freeride” on American investments in pharmaceutical development.

This dynamic not only distorts the pricing signals required for efficient international price discrimination but also undermines the long-term sustainability of the global pharmaceutical innovation ecosystem. In this context, policies such as Most Favored Nation (MFN) pricing, which tie domestic prices to the lowest prices available globally, further threaten to erode firms’ ability to pursue market-based pricing strategies. Such constraints risk weakening the incentives for continued R&D investment and may ultimately reduce the number of new therapies available to patients worldwide.

### **Section 3: Revenue Losses from MFN Pricing of Already Marketed Drugs**

This section examines the implications of aligning the U.S. branded drug prices in public programs for already marketed drugs with the lowest international prices under the MFN policy framework.

#### **Section 3.1 Revenue Loss Methodology**

The MFN pricing policy requires that branded drug prices in the U.S. be no higher than the lowest price among the comparable foreign markets. Formally, this means the U.S. price will be set to match the minimum price offered abroad across a basket of reference countries. In our analysis, we use percentages to represent the price levels among selected countries. We normalize the US baseline net prices to 100% so the branded drug prices in foreign countries will be percentages that are lower than 100%. This allows us to compute global revenue losses from the price reduction due to MFN pricing based on the change in price level.

A critical assumption in our analysis is that the branded drug sales volumes in the U.S. remain the same, even as the prices decline due to the MFN pricing. This is motivated by the fact that patients' out-of-pocket costs (such as copays) often represent only a small fraction of total drug spending in the Medicare and Medicaid programs, and the MFN policies are unlikely to lower patient costs. Thus, patients' demand for the branded drugs is unlikely to be affected regardless of the payments made by the government. By holding the volume constant, the reduction in branded drug price will lead to an identical proportion reduction in branded drug revenue in the insurance programs. Therefore, we can estimate the revenue loss in the global markets by multiplying the global revenue share of branded drugs in the sampled programs by the price reduction. These results are further used in our approximation of R&D spending loss, new drug loss, and patient health loss.

To evaluate the revenue loss resulting from the MFN pricing policy, we set the U.S. branded drug average net price in the selected public programs at 100%. Suppose the lowest branded drug net price in the foreign countries is  $X\%$ , where  $0 < X < 100$ . According to the MFN pricing system, the branded drug net price in the U.S. will be reduced to  $X\%$  mandatorily, while other countries' prices remain the same. This will lead to an identical percentage loss in the branded drug revenues. Suppose the prescription drug revenue share of the U.S. is  $S$  in the global market, and the public programs' total revenue share for branded drugs is  $s$  in the U.S. market, where  $0 < s, S < 1$ . Then, the global revenue share for which branded drugs sold by U.S. public programs accounts is  $S \cdot s$ . This yields the global revenue loss by weighting the price reduction by the global revenue share for branded drugs in the sampled public programs. The formula will be

$$\text{Global Revenue Loss} = S \cdot s \cdot (100\% - X\%)$$

This therefore assumes that prices outside of the lowest priced country remain the same, while the U.S. matches the lowest priced country due to not being able to exit that country for already marketed drugs. Exiting established markets for already launched drugs is generally impractical due to existing contractual obligations, regulatory hurdles, and potential reputational damage with governments and providers. Additionally, abrupt withdrawal from these markets could trigger compulsory licensing or retaliatory measures, making exit a commercially and politically costly strategy.

### **Section 3.2 Quantifying Revenue Losses from MFN for Marketed Drugs**

In this subsection, we evaluate the revenue loss of the U.S. and global markets. When considering the MFN effects on U.S. revenue, we assume MFN pricing would apply to Medicare Part B, Medicare Part D, and Medicaid. Because Medicaid rebates, which determine the program's net price, are linked to the 340B program, we also assume that 340B drug discounts are impacted.<sup>1</sup> For these programs, we have their prescription drug revenues in the U.S. market in 2023, as shown in Table 1. According to IQVIA, total net spending on prescription drugs in the U.S. in 2023 was \$435 billion. Subsequently, we estimate the net revenue shares for prescription drugs (encompassing both branded and generic drugs) across the public programs.

*Table 1: Net Revenue Shares for the Selected Public Programs*

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<sup>1</sup> According to MACPAC, the ceiling price of the 340B program is the drug's Average Manufacturer Price (AMP) minus the Unit Rebate Amount (URA), which is the same process as the way to determine a drug's rebate obligation under Medicaid.

Program	Net Revenue (in billion)	Net Revenue Share
Medicare Part B	54	12.41%
Medicare Part D	188	43.22%
Medicaid	51	11.72%
340B Program	56.1	12.90%
Total	349.1	80.25%

Source: Medicare Part B and Medicare Part D data are from the MedPAC 2025 data book; Medicaid data are from KFF; 340B program data are from IQVIA.

Note: The revenue shares are calculated by  $\frac{\text{Total Revenue of the Program}}{435}$ . The sum of programs' revenue share is not the same as the Total due to rounding.

According to RAND (2021), branded drugs account for 87% of revenues in the United States. Thus, we estimate that the revenue share of branded drugs sold by these public programs in the U.S. market is

$$s = 87\% \cdot 80.25\% = 69.82\%.$$

Drawing from previous work in our center, we have the net price ratios for branded drugs between the U.S. public sector and select peer countries. We then invert the ratios to normalize the average net price of U.S. branded drugs across the selected public programs to 100%, and estimate foreign prices accordingly, as shown in Table 2. Among the comparable markets, Japan has the lowest relative branded drug price of 29.04%. Thus, the U.S. and other foreign net prices will decline to match this price.

*Table 2: Branded Drug Price Levels in the Selected Countries*

Country	Price
US	100%
UK	34.53%
Germany	35.64%
Canada	40.18%
Japan	<b>29.04%</b>
France	31.00%

According to RAND (2021), the U.S. accounts for  $S = 62.4\%$  of the global prescription drug sales. Based on our formula, we estimate the revenue loss due to the MFN policy pricing to be:

$$U.S. Revenue Loss = 69.82\% \cdot (100\% - 29.04\%) \approx 49.54\%$$

$$Global Revenue Loss = 62.4\% \cdot U.S. Revenue Loss \approx 30.92\%$$

Given that the GDP in the United States was \$27.72 trillion and the pharmaceutical net revenue was \$435 billion in 2023, the U.S. To benchmark this revenue loss, it amounts to about 0.8% of a US GDP of \$27.7 trillion.

This estimation adopts a conservative assumption that MFN pricing impacts are confined to public programs, with no assumed spillover into the commercial market. However, numerous industry analysts expect that at least some price spillover into private insurance markets is expected, given that the MFN price would fold into the Average Sales Prices, which is the basis for reimbursement for physician-administered drugs used by most private market plans. The MFN price would also reasonably reset Medicaid's best price, which would trigger further rebates required from manufacturers in Medicaid and 340B. Further spillover is also likely, as commercial payers may leverage MFN benchmarks in their negotiations. Therefore, our estimates may understate the full extent of revenue and innovation impacts if such spillovers occur.

#### **Section 4: The Implied Innovation and Patient Health Losses Due to Revenue Impacts**

In previous work, we reviewed the average R&D elasticity with respect to global revenue from 10 different studies to find an average conservative estimate of elasticity of 1.54. We then use the elasticity to understand the impact of new drugs on the market, assuming this relationship is proportional so that a 10% reduction in R&D spending results in 10% fewer drugs. In addition, previous studies in our center summarized that every new drug is associated with 1.4 post-approval indications.

Using this 1.54 elasticity from the literature synthesized in our prior paper and the average baseline of 44 annual new drug approvals, we evaluate the innovation losses by quantifying the reduction in R&D spending and new drug approvals. The net revenue loss in the global market will thereby lead to:

$$R\&D Spending Loss = 1.54 \cdot Global Revenue Loss$$

$$New Drug Loss per Year = 44 \cdot 1.54 \cdot Global Revenue Loss$$

The reduction in R&D expenditure resulting from MFN pricing and other price control policies has a substantial impact on patient health. Utilizing the cost-effectiveness analysis from our previous study, Philipson and Durie (2021) estimate that every \$2,000 decrease in R&D spending corresponds to the loss of one statistical life year. In that same study, they further find that 135 fewer new drugs would lead to an estimated 331.5 million life years lost in the U.S. alone. Therefore, we estimate the effect of MFN pricing on patient health as follows:

$$\text{Life Year Loss} = \frac{331.5 \text{ million}}{135} \cdot \text{The Number of New Drug Loss per year}$$

We found that the global market will lose 30.92% of its total revenue from already marketed drugs if the MFN pricing is implemented. If persistent over time, this leads to the corresponding losses in R&D spending and new drug approvals.

$$\text{R\&D Spending Loss} = 1.54 \cdot 30.92\% = 47.61\%$$

$$\text{New Drug Loss per Year} = 44 \cdot 47.61\% \approx 21$$

Based on the average of 1.4 post-approval indications per new drug, we estimate an additional 29 post-approval indications lost. Thus, the total annual indication loss is

$$\text{Annual Indication Loss} = 21 + 29 = 50$$

Based on the annual new drug losses, we approximate the effect of MFN pricing on patient health. The loss in patient health is calculated as:

$$\text{Life Year Loss} = \frac{331.5 \text{ million}}{135} \cdot 21 \approx 51.57 \text{ million}$$

In summary, the estimated global revenue loss will result in a 47.61% reduction in R&D spending and subsequently an annual loss of 50 treatments—including 21 new drug losses and 29 declined post-approval indications. Consequently, this innovation loss will result in a per-year health loss of 51.57 million life years, equivalent to approximately 657,738 lives.<sup>2</sup>

### **Section 5: Sensitivity Analysis**

To test the robustness of our baseline estimates, we conducted a sensitivity analysis under the assumption that the net price reduction induced by the MFN policy is only half as large as in our main scenario. In this alternative specification, the revenue shortfall is correspondingly smaller, leading to attenuated effects on innovation and health outcomes.

Over a 10-year horizon, the reduced shortfall is projected to result in a combined loss of approximately 240 indications—including 100 new drugs lost and 140 post-approval indications. This represents roughly 50% of the baseline losses reported above.

In terms of health impact, the forgone innovations under this conservative scenario are estimated to translate into a 10-year health loss of about 246 million life-years, corresponding to approximately 3.1 million lives lost worldwide.

### **Section 6: Future Market Strategies for New Drugs**

This analysis assumed that exits from countries of already launched drugs would not be feasible. For new drugs not launched yet, the implications of MFN may be different. International price discrimination enables pharmaceutical firms to better serve poorer nations and to optimize global

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<sup>2</sup> The number of full lives is obtained by dividing 51.57 million life years by the U.S. life expectancy of 78.4 years

returns by adjusting prices to local purchasing power. Under an MFN pricing framework, however, this could become increasingly constrained. Firms may be discouraged from launching new drugs in lower-price countries if doing so reduces their price in the U.S., the largest and most profitable market.

Faced with this trade-off, manufacturers may adopt one of two strategies: accept lower international uniform prices in the U.S. and preserve broad market access across many countries or restrict launches to the U.S. market to maintain the highest possible MFN benchmark. The former approach expands access but reduces unit revenue, while the latter preserves margins but limits global volume. The optimal choice depends on the final MFN price-setting policy, the comparative size of each market for a particular product, and the extent to which other policies also affect prices.

Over time, these strategic adjustments may distort launch sequencing, reduce the availability of new therapies in lower-income countries, and weaken global health equity. While speculative, such firm behavior is economically rational under a constrained pricing policy framework. The magnitude of future innovation loss and health impact will ultimately depend on MFN policy design and how manufacturers respond to the incentives and constraints embedded in it. If strategies to not enter lower-priced countries were extensively used, they could potentially lead to limited price reductions in the U.S. but still lead to reduced global revenues and innovation. In addition, MFN could increase foreign free riding on the US, opposite to its intended effect, as poorer nations would have incentives to compulsorily license new drugs.

## **Section 7: Conclusion**

We estimate that applying the MFN pricing policy to both Medicare and Medicaid would reduce U.S. pharmaceutical revenues by 49%. In the global context, pharmaceutical revenues are projected to decline by 31%, leading to a nearly 48% reduction in R&D spending. Over a 10-year horizon, this shortfall is expected to result in a combined loss of approximately 500 indications, including 210 new drug losses and 290 declined post-approval indications. Collectively, these foregone innovations are projected to translate into a health loss of about 516 million life-years, corresponding to approximately 6.6 million lives lost worldwide.

The hypothetical analysis illustrates a sequence of negative effects of MFN pricing implemented on marketed drugs. While the MFN pricing policy is intended to cut drug spending, it may generate broader long-term costs by reducing R&D investment and worsening health outcomes. These effects could in turn offset the savings from MFN pricing and increase the future healthcare expenditure. The full economic impact of MFN pricing needs to be evaluated comprehensively.

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