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Drug Pricing in the United States: Theory and Evidence

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Concern about high and rising medical care spending is increasingly focused on prescription drug spending, especially spending on patent-protected brand-name drugs. Reducing either the prices or the quantities of such products would obviously reduce costs for public and private insurers, and legislative action has already been undertaken in the United Sates to compel lower Medicare prices in the future. However, drugs also are known to provide substantial marginal health benefits—which implies a policy tradeoff: lower current prices may reduce current cost and increase use of today's effective drugs but lower prices will also discourage investment in R&D for future effective drugs.

This special issue deals with pharmaceutical innovation — and also current pricing of patent-protected drugs in international markets. In U.S.- branded markets, final prices are often set through negotiations between drug companies as sellers and insurance companies as buyers. In this setting, both sides have strong positions as clearly indicated by the resulting outcomes. As recently reported, net branded pharmaceutical prices on average fall much below the list price set originally by drug companies.

While drug companies, like all sellers, seek the profit maximizing prices for their products, the obvious question is what motivates insurance companies to pay more than production costs. The answer to this query surely rests on their judgment as to the value of the health benefits resulting from a drug. Our earlier research, published in the *Journal of Benefit Cost Analysis*, documents an empirical connection, on average, between value and price (Frech et al, 2022). Prices furnish the links among payments, value, and innovation; and this special issue is, therefore, devoted to papers that clarify those links.

Better understanding of the links will permit improvements in public policy and private insurance purchasing that can enhance welfare and avoid unintended adverse side effects. The goal is to

assemble papers that help to fill in some of the blanks in the complex relationship between profit-motivated drug firms and buyers who are collective and individual and who are public and private. Papers focus on the situation in the United States, the largest single-country drug market but also consider causes and consequences from policies in the rest of the world. The resulting papers are listed below.

One set of papers considers the persistent and resistant mystery of drug pricing for patent-protected drug sellers. While prices, on average, definitely increase with health value, it is the upward deviations from this average, and the process that determines how much an increment in health will cost, that remains a mystery. Why are some drugs so expensive? The theoretical paper by Pauly, Comanor, Frech, and Martinez (this issue) helps to explain why. The paper shows that even in a simple model in which drug firms charge the simple monopoly price given insurance coverage, and insurers and their customers choose their ideal insurance, given drug prices, equilibrium may not exist, or may be associated with prices so inefficiently high as to make no insurance and no new drugs a better alternative. It is the simple form of insurance, demanded for protection against big bills, that itself can make those bills higher than they would otherwise—and most especially when patients and even sophisticated insurance and benefits managers have to deal with drug company that has a good product and a bulletproof patent. While drug companies with patents have government protection for their monopoly power, and can set any price they want, they cannot sell any quantity they want. The profit-maximizing price takes account of this limitation. However, insurance attenuates the usual discipline that requires enough value for the price by insulating patients from the price at the point of use, only to have the high cost brought home as insurance premiums rise.

The paper by Ippolito and Levy (this issue) illustrates that one approach to making sense in insurance coverage—using evidence on a drug's clinical benefit relative to the price drug sellers charge—at present yields puzzling results. When a drug's price is low because it is generic, buyers do use more of it. However, insurers and patients do not seem to respond to the cost effectiveness of branded drugs; those priced low relative to their value are not demanded in larger amounts. Private insurers are less aggressive in using evidence on overpricing of branded drugs relative to their benefits in selecting which drugs to favor than they are in encouraging the use of generics.

Finally, the paper by Hernandez, Gabriel, Guo, Sepassi, Gellad, and Dickson (this issue), a

provides some useful evidence of regularity on one of the more confusing features of US drug pricing and insurance coverage, the offering of discounts (or variation in net price received) by drug sellers—mandatory government discounts for new therapeutic classes are growing faster than discounts to private sector buyers, and bigger insurance plans do better than smaller ones.

The other set of papers in this issue deals with a second puzzle in drug economics—the link between the excess of price or revenue over the marginal cost of making drugs and investment in the R&D needed to discover and bring to market new effective drugs. The paper by Dunn, Fernando, and Liebman (this issue) explores how much of US spending growth is due to these new drugs and other treatments. The authors use a novel method of measuring innovation in health care and show that such innovation makes up a significant share of spending growth. This provides context for how much high-cost new drugs and treatments contribute to spending growth.

The link between profit incentives and innovation is taken into account in discussions of drug pricing and potential drug price caps in the US, but in the rest of the world (ROW) it is largely ignored. Does this “free riding “ lead to harmful effects on the global supply of new drugs? In Chen, Comanor, Frech, and Pauly (this issue) the authors find that ROW did make a positive (if lower than US) contribution to drug firm profits in the case of new drugs approved by the FDA.

Finally, Salant (this issue) attributes the small number of online personal imports of branded prescription drugs from other high-income countries with lower prices to groundless consumer fears that such imports are unsafe, a fear stoked by pharmaceutical industry spending. Unlike personal imports for own use, commercial imports for resale are strictly banned (unless the importer is a drug manufacturer). Salant theorizes that removing this ban would prompt manufacturers to narrow the price differentials in order to maintain import deterrence, benefiting Americans through lower drug prices.

Drug pricing and drug innovation are even more in the news these days because of recent legislation that attempts to have one part of government (Medicare) bargain with drug sellers in order to undo the consequences (monopoly prices) from what another part of government (the US Patent Office and the Food and Drug Administration) have done. The papers in this issue will help in untangling the resulting confusion— even if much of it will still remain. They emphasize that some drugs provide substantial health benefits, benefits which by any standard of money

value are worth more than their cost. But not every pill in every use provides value for money; some imprecision is inevitable because medicine is imprecise, but poorly designed insurance and poorly functioning insurance markets may allow value to leak out of many transactions.

Drug firms charge different prices for the same drug, sometimes through varying discounts in the U.S. market and sometimes as lower prices in other countries. The incentive to patients to seek out these lower prices constrains the ability of firms to charge high prices to the rest of the U.S. market, so such price discrimination can be helpful in holding down overall prices. If Medicare is able to negotiate even lower prices for its insureds, according to this pattern that should lead to lower prices in other markets in the U.S. as well.

As suggested, at present U.S. public policy on drug spending has moved to begin a brute force approach: just make the high prices and high profits associated with (government-enforced) patents illegal, and see what happens. There will be some side effects: changes in volume of use, reduction in the flow of new drugs, but the hope is that the benefit to the government's budget and possibly some increase in use of high-value, now more affordable drugs that will more than offset these effects. The financial benefits, if they do arise, will show up right away, and the adverse consequences on innovation are going to take longer to emerge if they do happen, so evaluating this experiment will require time and effort.

The papers in this volume do show that recent new drugs have substantial value, and that contributions toward drug firm profits, whether from higher prices in the U.S. or from some other countries in the rest of the world, do potentially make a difference in pushing drug investor evaluations of potentially promising new ideas over the financial hump. But they also show that blockbusters—with both high sales and high net health value (even at high prices) are much harder to predict. Did the drugs that eventually became standards of care and best sellers have golden prospects from the beginning, or were there surprises (good for these drugs, bad for other drugs that many were betting on)? We know that in the history of many recent high-benefit innovations there were episodes when the idea and project was near death, at least in the telling of the eventual winners.

More generally, to provide evidence on the effects of lower drug prices requires, among other things, a much clearer understanding than we now have about the process of initiating or curtailing drug development efforts, and the link between those efforts and the emergence of

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highly effective treatments and their prices. In addition, we need to know how usage of drugs is affected by the prices sellers charge and how insurers manage care (and not just by patient cost sharing). These papers contribute to that discussion but the final verdict on whether efforts to change prices will on balance do more good than harm, has yet to be rendered.

Abstract

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