Drug pricing has taken center stage in U.S. politics, and it's high time that it should. The soaring prices for drugs like Sovaldi ($1,000 a pill) and the recent hike of Deraprim from $13.50 to $750 a pill after the supplier was bought by a shady hedge-fund manager, have caused white-hot fury in the public. Corporate lobbyists and their friends in the media spout free-market platitudes about why the sky-high prices are necessary to promote innovation. It's time for a serious understanding of the policy issues.

Drug pricing is not like the pricing of apples and oranges, clothing, or furniture that well and good should be left to the marketplace. There are two major reasons. First, the main cost of drug production is not the cost of manufacturing the tablet but the cost of producing the knowledge embedded in the tablet. Second, there is often a life-and-death stake in access to the drug, so society should take steps to ensure that the drug is affordable and accessible.

To ensure that financial resources flow to scientists to produce the knowledge embedded in the tablet, the government does two things. First, the government pays directly for a substantial part of the research and development (R&D). The U.S. National Institutes of Health (NIH) spends around $30 billion a year on biomedical research, much of which ends up in pharmaceutical products. The NIH spending is one of the great bargains on the planet.

Second, the government grants patent rights for drug discovery. A patent gives a 20-year exclusive right to make, use, or sell an invention, effectively a 20-year monopoly. This allows companies to boost their prices, earn monopoly profits, and thereby recoup the costs of the R&D that went into the drug discovery.

It's a basic insight of economics that patent rights are a "second-best" solution to drug pricing, not an optimal solution. A patent creates an artificial monopoly to incentivize R&D. Yet it also reduces access to the product, perhaps with unacceptable and immoral life-and-death consequences. Rational drug pricing would get the best of the patent system but ensure that it is compatible with access to the life-saving drugs.

Unfortunately, the current rules of the game in the U.S. pharmaceutical sector do not compensate for the weaknesses of patents. They amplify them. In the name of market access, the federal and state governments have increased their purchases of prescription drugs for selected subgroups of the population, such as the elderly, the Veterans, and the poor. But the federal government mostly acts like a pure price taker, accepting whatever outrageous price the monopolist sets. The result is that government purchases of drugs are not solving the access deficiencies, but amplifying them. In the name of market access, the federal and state governments have increased their purchases of prescription drugs for selected subgroups of the population, such as the elderly, the Veterans, and the poor. But the federal government mostly acts like a pure price taker, accepting whatever outrageous price the monopolist sets. In the case of Medicare, the law currently prevents the federal government from doing otherwise.

The result is that government purchases of drugs are not solving the access deficiencies, but amplifying them. Monopolistic patent holders know that the federal government will pay an outrageous price for the medicine, so it jacks up the price to bilk the government, ultimately bilking the taxpayers. Not only does the government end up spending billions or tens of billions in excess costs; the price increases actually reduce, often sharply, the number of patients receiving care who are not on government programs. Moreover, because of budget limits, the government even rations the drugs to the elderly, the poor, the veterans and others who ostensibly qualify for drug coverage.

The Hepatitis-C Virus (HCV) drugs of Gilead Sciences are the poster cases of monopolistic abuse. Gilead owns the patent for the molecule Sofosbuvir, which is sold in two formulations under the brand names Sovaldi and Harvoni. Gilead charges the federal government $84,000 ($1,000 per pill) for a full course of Sovaldi and $94,500 for Harvoni, even though production costs are under $200 per course of treatment. The company is making a killing and, incidentally, adds insult to injury by booking its outlandish US profits in an Irish tax haven.
While the government buys tens of thousands of HCV treatments from Gilead, it is also forced to ration its purchases because of budget constraints. Hundreds of thousands of HCV-infected Americans, both on and off government programs, are unable to obtain the medicines. Many of those being turned away are U.S. veterans who survived their tours in Iraq or Afghanistan only to be killed by Gilead’s not-so-friendly fire.

What should be done? Here are three key principles.

First, private R&D should certainly be protected by patents but only enough to elicit the needed R&D, not to produce outlandish profits. Instead of giving carte blanche to the monopolist patent-holder in setting its prices, the government should negotiate a reasonable price, or set a price ceiling, that recognizes the high costs of R&D, the large social benefits of access, and the varying ability to pay for the drugs by the patient population and the government programs buying the drugs.

Since a company's success rate in R&D is likely to be around 10 percent, the "prize" for R&D success should be patent-protected profits that are around 10 times the cost of the R&D. The R&D costs of developing Gilead’s HCV drugs were probably on the order of $500 million in total, suggesting patent-protected profits on the order of $5 billion. Such profits would be earned with drug prices for Sovaldi and Harvoni below $10,000 per treatment, not above $84,000! The number of individuals treated and cured would soar in the much lower but still highly profitable price range.

Currently the companies are not required to disclose the true R&D costs. They should be required to do so as the basis for rational drug pricing through negotiations or price ceilings.

Second, when the U.S. government pays for much of the R&D, it should share in the property rights. This should be a no-brainer, but in fact the NIH simply gives away most or all the intellectual property that it has financed, so the taxpayer pays part of the R&D bills but the returns are fully captured by private companies.

Third, when companies like Gilead make profits from their U.S.-based research and U.S.-based production and sales, they should certainly pay U.S. taxes on their profits. The fact that the IRS lets them hide their profits in overseas tax havens is scandalous and without any logical justification whatsoever.

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