

## Opinion

### Prizes, not patents<sup>1</sup>

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Part of modern medicine's success is built on new drugs, in which pharmaceutical companies invest billions of dollars on research. The companies can recover their expenses thanks to patents, which give them a temporary monopoly and thus allow them to charge prices well above the cost of producing the drugs. We cannot expect innovation without paying for it. But are the incentives provided by the patent system appropriate, so that all this money is well spent and contributes to treatments for diseases of the greatest concern? Sadly, the answer is a resounding "no."

The fundamental problem with the patent system is simple: it is based on restricting the use of knowledge. Because there is no extra cost associated with an additional individual enjoying the benefits of any piece of knowledge, restricting knowledge is inefficient. But the patent system not only restricts the use of knowledge; by granting (temporary) monopoly power, it often makes medications unaffordable for people who don't have insurance. In the Third World, this can be a matter of life and death for people who cannot afford new brand-name drugs but might be able to afford generics. For example, generic drugs for first-line AIDS defenses have brought down the cost of treatment by almost 99% since 2000 alone, from \$10,000 to \$130.

But, despite the high price they pay, developing countries get little in return. Drug companies spend far more money on advertising and marketing than they do on research, far more on research for lifestyle drugs (for conditions like impotence and hair loss) than for lifesaving drugs, and almost no money on diseases that afflict hundreds of millions of poor people, such as malaria. It is a matter of simple economics: companies direct their research where the money is, regardless of the relative value to society. The poor can't pay for drugs, so there is little research on their diseases, no matter what the overall costs.

A "me-too" drug, for example, which nets its manufacturer some portion of the income that otherwise accrues only to the company that dominates a niche, may be highly profitable, even if its value to society is quite limited. Similarly, companies raced to beat the human genome project in order to patent genes such as that associated with breast cancer. The value of these efforts was minimal: the knowledge was produced just a little sooner than it would have been otherwise. But the cost to society was enormous: the high price that Myriad, the patent holder, places on genetic tests (between \$3,000 and \$4,000) may well mean that thousands of women who would otherwise have been tested, discovered that they were at risk, and taken appropriate remediation, will die instead.

There is an alternative way of financing and incentivizing research that, at least in some instances, could do a far better job than patents, both in directing innovation and ensuring that the benefits of that knowledge are enjoyed as widely as possible: a medical prize fund that would reward those who discover cures and vaccines. Since governments already pay the cost of much drug research directly or indirectly, through prescription benefits,

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they could finance the prize fund, which would award the biggest prizes for developers of treatments or preventions for costly diseases affecting hundreds of millions of people.

Especially when it comes to diseases in developing countries, it would make sense for some of the prize money to come from foreign assistance budgets, as few contributions could do more to improve the quality of life, and even productivity, than attacking the debilitating diseases that are so prevalent in many developing countries. A scientific panel could establish a set of priorities by assessing the number of people affected and the impact on mortality, morbidity, and productivity. Once the discovery is made, it would be licensed.

Of course, the patent system is itself a prize system, albeit a peculiar one: the prize is temporary monopoly power, implying high prices and restricted access to the benefits that can be derived from the new knowledge. By contrast, the type of prize system I have in mind would rely on competitive markets to lower prices and make the fruits of the knowledge available as widely as possible. With better-directed incentives (more research dollars spent on more important diseases, less money spent on wasteful and distorted marketing), we could have better health at lower cost.

That said, the prize fund would not replace patents. It would be part of the portfolio of methods for encouraging and supporting research. A prize fund would work well in areas in which needs are well known – the case for many diseases afflicting the poor – allowing clear goals to be set in advance. For innovations that solve problems or meet needs that have not previously been widely recognized, the patent system would still play a role.

The market economy and the profit motive have led to extremely high living standards in many places. But the health care market is not an ordinary market. Most people do not pay for what they consume; they rely on others to judge what they should consume, and prices do not influence these judgments as they do with conventional commodities. The market is thus rife with distortions. It is accordingly not surprising that in the area of health, the patent system, with all of its distortions, has failed in so many ways. A medical prize fund would not provide a panacea, but it would be a step in the right direction, redirecting our scarce research resources toward more efficient uses and ensuring that the benefits of that research reach the many people who are currently denied them.

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SUGGESTED CITATION:

Joseph E. Stiglitz, "Pizes, Not Patents", *post-autistic economics review*, issue no. 42, 18 May 2007, pp. 48-49, <http://www.paecon.net/PAERreview/issue42/Stiglitz42.htm>