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## Not just for profit, or not just?

As the Swiss drugs company behind Tamiflu comes under pressure to allow clones, Salil Tripathi asks whether bargain-basement copies really help

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The Swiss pharmaceutical company Hoffman-La Roche is coming under pressure to open up its production of Tamiflu, the drug most experts think is the best hope in the fight against the dreaded H5N1 strain of bird flu.

The UN secretary-general Kofi Annan has said the company should show compassion. Gilead Sciences, the US company which owns the patent for oseltamivir, the generic name for Tamiflu, wants the production rights back because it says Roche hasn't been aggressive in marketing the medicine. The Taiwanese government has stated it will try to force the company to allow home production. Cipla, one of India's leading manufacturers, has promised to make cheaper knock-offs - and one of the ironies of our times is that such opportunistic interventions, also driven by profit motive, are considered humanitarian by so many development agencies.

Making Tamiflu is not a simple process whereby pills are spewed out by a tireless machine. Tamiflu, an antiviral drug that treats flu, is made from the pods of Chinese star anise plants in a process that takes time and costs money. Making a vaccine also takes time, but in general, there is more money to be made in curing diseases rather than in preventing them.

Roche is not the first company to face such pressure. After the September 11 2001 attacks on New York, the German pharmaceutical company Bayer cut its prices for the anthrax antidote Ciprofloxacin under pressure from the US health secretary Tommy Thomson. Pfizer and Abbott Labs, the makers of medicines that fight HIV-Aids, have been criticised for trying to protect their intellectual property.

The moral dilemma has become acute because many think something is unseemly about a company raking in large profits when millions of people, many in agony, and many more poor, need the medicine to ward off disease and survive.

The reality is more complicated. However much a company reduces the price, the sums just don't add up. At \$1 (57p) a day, Cipla's antiretroviral medicines may seem cheap when compared with drugs

made by western pharmaceutical companies which cost 30 times as much. But for most poor people living in poor country, even \$1 a day is unaffordable. Millions earn less than that in a day.

In any case, corporations may give away medicines once, as an act of charity; again, as an act of reluctant philanthropy; and the third time, if they feel blackmailed. But by the fourth time, they will move to some other lucrative business, where they wouldn't get harangued to place people before profits.

Bill Gates, whose foundation provides more than a third of the world's budget to fight malaria, and whose \$22bn foundation provides more money for global public health than many governments, said in a recent interview to a US college newspaper:

"When you think about developing world health, the price of drugs is not the key issue. It's the drugs that aren't being invented, and part of the reason they aren't being invented is that [if] the pharmaceutical companies work in these areas, then they're expected to give the drugs away. So they never go into the area, and so what we have to do is create the right incentives for the pharmaceutical companies so there is willingness to do differential pricing. Where government money, philanthropic money comes in and takes some of the risk, then we get the breakthroughs."

Differential pricing implies burden sharing. It means not only that wealthier nations would cross-subsidise healthcare costs in poor countries, but also that the medium-sized powers - Brazil, Russia, India, China, South Africa, for example - would pay more for their imports than they currently do. Brazil may be poorer than Britain, but it is wealthier than Burundi.

One way to drive down prices is through advance purchases. With the needs of Burundi in mind, the British chancellor Gordon Brown said this week that he would push for rich nations to commit to making advance purchases of life-saving vaccines for poor children at a G7 meeting in December.

The idea behind advance purchases is deceptively simple. Governments use their bargaining power to secure bulk discounts from manufacturers and sell or distribute the drugs later to needy countries at prices those countries can bear.

There are also advantages of economies of scale. The World Health Organisation has considered a centralised system to purchase flu vaccines to save costs. But there are constraints. Some companies have claimed that when the UN Children's Fund implemented such a scheme, it shifted the balance of power so firmly against companies that vaccine prices declined too soon and too far, forcing some manufacturers to withdraw and causing innovation and investment to dry up.

The way around that dilemma could be pre-commitment to purchase. Advance commitments to purchase may create the incentives that inventors need to pursue active research. Thomas Schelling, who won the Nobel Prize for Economics this year, wrote about the value of precommitment.

The idea has been fleshed out by Harvard's Michael Kremer and by economists at the Centre for Global Development in Washington.

Kremer's research has shown that even at \$40 per immunised person, vaccines against malaria and HIV would be cost-effective in poor countries. But because private firms don't expect to receive even a tenth of that amount in the form of revenue from those countries, they have no incentive to develop vaccines.

Kremer argues that governments or private foundations can step in, make an advance commitment to purchase a certain quantity at a particular price, if it were invented. The commitment would be binding, with strict stipulations and requirement of quality control.

The pre-committed buyer could then make the vaccine available to developing countries in return for payments the country can bear. Essentially, the model transfers the risk from the company (which does not want to lose profits) and countries (which don't want to miss out on medicines) to an intermediary who can afford to absorb the risk.

"This is highly cost-effective relative to other health programmes," Kremer writes in an academic paper clarifying his concept. Such a purchase commitment "would be highly cost-effective even if it covered vaccines that departed significantly from the ideal," he adds.

But can it work in the real world? Ask Gates, who made grants of \$258m over the weekend to support research for the malaria vaccine. Gates said it was a "disgrace" that the world had allowed malaria deaths to double in the last 20 years, and that it killed 2,000 African children daily.

Nearly 40% of that money will go to a vaccine initiative working with GlaxoSmithKline on clinical trials of its experimental vaccine, Mosquirix. Another \$100m will go towards accelerating the development of promising drugs, while the rest will pay for research to improve insecticides and other mosquito control methods.

Gates is clear about one thing: the poor will not have to bear the burden of the results. He can be clear because he understands the power of incentives. Ultimately, incentives, and not hard bargaining, drive innovation.

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