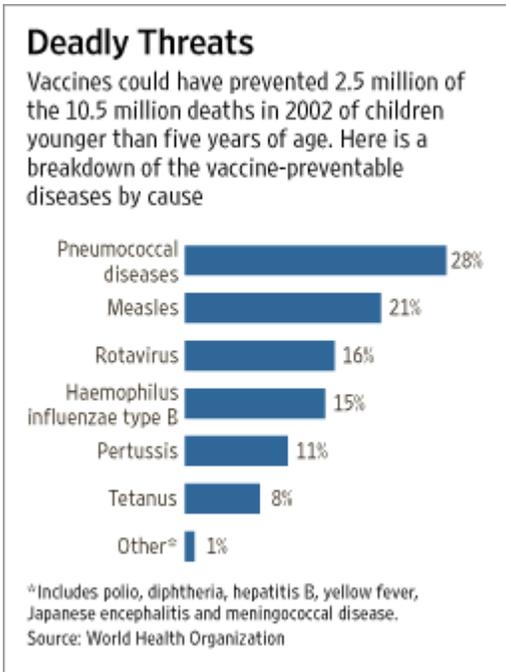


Why a Market-Driven Vaccine Plan Faces Big Obstacles

By NICK TIMIRAOS
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Nearly 2.5 million children die every year from diseases for which vaccine development or distribution is faltering. Drug makers have shown little interest in vaccines that could stem this tide of childhood deaths because they aren't profitable.

Now, a handful of Western nations and international bodies is moving ahead with a market-based experiment aimed at tackling two big problems: the lack of research on vaccines needed primarily by poor countries -- only 10% of disease-related drug research focuses on maladies that affect 90% of the world's population -- and the long distribution time. Hepatitis B vaccine was developed in 1981, but two decades passed before it was introduced in the world's poorest nations.



The new approach, called the advance market commitment, works like this: Donors commit to buying yet-to-be-developed vaccines in bulk for poor nations, if drug makers are able to deliver a product that meets specifications and a price can be settled on in advance. The idea is that everyone involved wins: Drug companies get an incentive to innovate, while donors avoid bankrolling dead-end research.

Supporters of the plan range from Bill Gates to Pope Benedict XVI and include public-health

officials, nongovernmental organizations, wealthy nations and some drug makers. Backers say the beauty of the idea is that it lets the market -- not governments -- determine which vaccine will be produced and which company will produce it.

"If the government were to subsidize research and development, ultimately it would be bureaucrats choosing the right avenue to research, selecting the right lab, the right institution," says Carlo Monticelli, an economist in the Italian Finance Ministry, which has been a top financial backer of the initiative.

Advance market commitments are still untested. In February, donors agreed to the first one -- for a vaccine for pneumococcal disease, which kills 700,000 children annually in developing countries. The Gates Foundation, the United Kingdom, Italy, Canada, Norway and Russia have committed \$1.5 billion for the project. Backers hope to complete the legal framework by April and to deliver a vaccine to participating countries by 2010.

But while such commitments are more promising than some alternatives -- trying to bully drug makers into cooperating with global-aid agendas, for example, or paying them millions of dollars to chase long-shot solutions -- the theory behind them has some serious holes in it.

For one thing, drug companies may not be willing to bet their development budgets on these commitments. Before a deal can be reached, drug makers, donors and recipient countries have to agree on a price and specifications for the vaccine. "Pharmaceutical companies will always be concerned about how reliable those [advance market commitments] really are, whether the plug could be pulled out at the 11th hour," says Peter J. Hotez, a tropical-disease specialist at George Washington University.

Moreover, though advance market commitments were first conceived as a way to spur research and development of vaccines still at an early stage -- those for HIV, tuberculosis and malaria, for example, which remain years or even decades away from completion -- they may not be well suited for that. Science, not money, presents the biggest hurdles for those diseases, says Adel Mahmoud, the former head of vaccines at Merck. That suggests advance commitments may be better suited to vaccines in the late stages of development, where funding is the biggest obstacle.

At least two companies, [GlaxoSmithKline](#) PLC and [Wyeth](#), have late-stage vaccines in development that could help control pneumococcal disease in the developing world. (Wyeth's existing pneumococcal vaccine, Prevnar, isn't effective against strains of the disease found there.) The goal of the project is twofold: Spur final completion of the vaccines and offer financial insurance to drug makers that a market exists for them.

Skeptics contend that the pilot project won't prove that advance market commitments can deliver big scientific breakthroughs because the initiative is targeting a mostly developed vaccine. Such commitments aim for low-hanging fruit, they say, rather than delivering true scientific innovation.

Oxford economist Andrew Farlow argues that the opportunity costs of an advance market commitment are too high. Even if such arrangements save some lives, he says, they will peel away money and energy that could instead go to less-costly treatments for people already afflicted: "You may get your success story, but it's what you'll lose in the process that you might have had." He and others say that more people would be helped by paying for things like measles immunizations, improved water quality and sanitation or mosquito nets in malarial regions.

And while the "pull" funding of the commitments isn't meant to replace research grants and other "push" funding, some politicians have hailed commitments as a silver bullet. That has critics worrying that other policy approaches could be shortchanged.

Another test: Can advance market commitments encourage competition among drug makers by spurring more than one firm to develop a vaccine? The power of the commitments to draw in vaccine makers from developing countries could be crucial, given that those companies often best understand how to price and distribute vaccines in those markets.

These questions don't mean the experiment is without merit. If it works, it could produce huge societal and economic benefits. The World Health Organization estimates that malaria, for example, accounts for as much as 40% of public-health spending and 50% of outpatient visits in the hardest-hit countries. And a study by Harvard University economists suggests that malaria slows economic growth in the badly hit countries by as much as 1.3% a year. Those countries that reduced their disease burden by 10% boosted growth by 0.3% annually.

At the heart of an advanced market commitment, says Michael Kremer, the Harvard economist who came up with the idea in the 1990s, is an effort to make markets work for the world's poor.

The shortcomings, though, are a reminder that multiple approaches and some creative thinking will be needed to overcome the world's most daunting health problems.

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