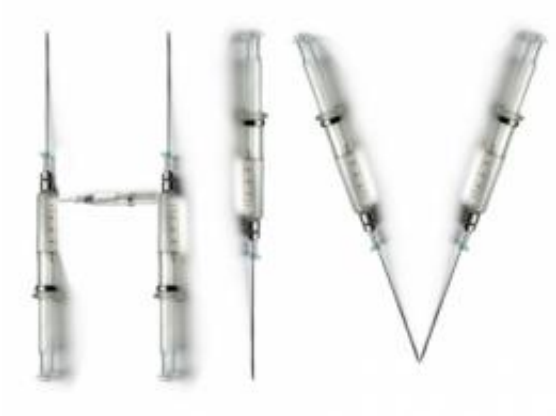
3 Questions: Jeffrey Harris on why we still don't have an HIV vaccine

November 4 2009, by Peter Dizikes



While many vaccines used around the world today are produced for profit by commercial firms, the private sector accounts for a tiny fraction of the funding for an HIV vaccine: 4 percent in 2008, down from 9 percent in 2007, according to Jeffrey Harris, an MD as well as a professor in MIT's Department of Economics. Harris, who has long studied health issues, contends in a new issue of the journal *Health Affairs* that the private sector should be given significantly more incentives to help develop an HIV vaccine.

He shared his thoughts on the subject with MIT News.

Q. In your new article, you state that the diminishing commercial interest in

an HIV vaccine is "a textbook case in the economics of inadequate private incentives." Why are firms reluctant to invest in HIV vaccine research?

A. Development of an HIV vaccine is an extraordinarily risky enterprise for a private commercial firm. Demand for the vaccine will depend on governments implementing large-scale vaccination programs, and we cannot know for certain which governments will decide to do that. International political pressures may prevent a successful vaccine developer from charging enough to recoup its investment and manufacturing costs, especially if some countries compel the developer to license the vaccine below cost to a generic manufacturer. What's more, adverse publicity about side effects could damage sales and result in product liability suits. While the scientific community has learned a lot from the many failed human vaccine trials, the manufacturers of those vaccines have been unable to convert any of these incremental advances in knowledge into profits. There has been much talk in the HIV research community about the need for sharing of preliminary data, biological samples, and laboratory techniques. But from the economist's standpoint, what is most essential is a mechanism for sharing risk.

Q. In that case, what is the right formula for rejuvenating commercial interest in an HIV vaccine?

A. One important element is that we need to establish a system of liability protection against vaccine side effects. Even more critical is that private firms receive guarantees to the commercial rights to the lucrative market for a vaccine against HIV subtype B, which predominates among homosexual men in North America, Europe, Australia and Japan. Also, it has become increasingly apparent that an HIV vaccine may need to be administered in combination with antiretroviral drugs, even if a stand-alone vaccine remains the ultimate goal for some researchers. In that case, we will need to create stronger incentives for manufacturers of antiretroviral drugs to get into the business of prevention. Right now,

antiretroviral producers see HIV-infected people as their best customers.

Q. In September, researchers reported they had achieved a 31-percent reduction in HIV infection during a vaccine trial in Thailand, the so-called RV144 trial. How do you interpret this latest finding?

A. While the RV144 trial showed a modest overall reduction in HIV infection, this effect was not evident among those participants who reported needle-sharing, commercial sex work or multiple sex partners. This finding underlines the critical importance of conducting human vaccine trials with "blinded" and "unblinded" treatment groups — that is, with one group that knows it is receiving the vaccine, and one group which is unaware of that fact. A trial constructed this way can indicate whether participants knowingly take more risks when receiving the vaccine. Given the shortcomings of current nonhuman primate models, we need to conduct even more human trials such as RV144. Whether or not RV144 ultimately leads to a commercially viable vaccine, we will learn a great deal from the analysis of the trial results, in particular, why the vaccine did not reduce the severity of disease among those recipients who became infected.

Provided by Massachusetts Institute of Technology (news : web)