

Potential Demand and Associated Policy Implications for Preventive HIV Vaccines in India

When a vaccine is developed, up to 53 million additional HIV vaccine courses could be administered each year in India if efforts are made now to address regulatory, infrastructural and political constraints.

The need for an HIV vaccine in India

- An estimated 5.2 million people were living with HIV or AIDS in India at the end of 2005, representing 12% of the global HIV/AIDS disease burden. Although the vigorous prevention programmes underway in India are helping to slow the spread of the epidemic, thousands were newly infected with HIV in the year 2005.
- The HIV/AIDS crisis requires a comprehensive response that balances expansion of existing prevention, treatment, and care programmes with investments in new prevention technologies, such as an HIV vaccine. An HIV vaccine with 50% efficacy given to just 30% of the population could cut the number of new HIV infections in the developing world by more than half over 15 years. However, for a vaccine to make a significant difference, it needs to be widely accessible and must be adopted quickly.
- Demand forecasts for products still in an early stage of development, such as an HIV vaccine, can inform policy decisions which may eventually enable accelerated adoption and accessibility.

Modelling demand for an HIV vaccine in India

- Consultations with key policymakers and other stakeholders to assess the preferences and perceptions that could affect demand for a future HIV vaccine suggested the following:
 - If an HIV vaccine can protect against all strains of HIV, it would likely be adopted in India 2-3 years after initial licensure in US and Europe;
 - HIV vaccines with an efficacy of at least 50% are likely to be adopted by the government of India (GOI) and implemented in vaccination programmes targeting groups at higher risk of exposure to HIV;
 - An efficacy of 70% may be needed for GOI-sponsored HIV vaccine programmes to be implemented in populations at lower risk of exposure;
 - Policymakers would like to see a vaccine with at least 3 years duration of protection for use in any GOI-sponsored programmes; and
 - HIV vaccines with an efficacy of less than 50%, but at least 30%, are likely to be made available, but only via private markets.
- On the basis of these findings and along with data from other published sources, a mathematical model has been developed to generate demand forecasts and to conduct scenario analyses to explore the effects of policy changes and different epidemiological conditions on demand.
- Cumulative demand over 30 years is estimated at 221 million and 788 million courses (Figure 1) for vaccines of medium and higher efficacy (50% and 70%, respectively).

Figure 1. Total annual demand forecasts for India

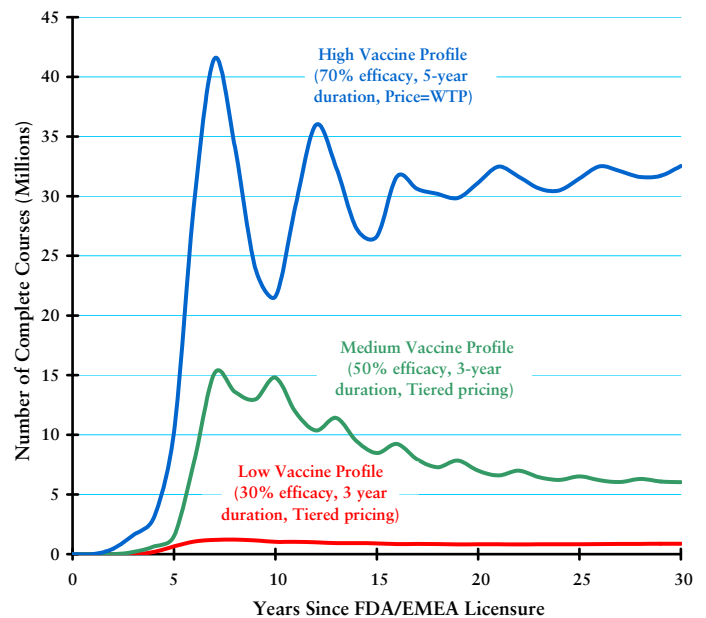


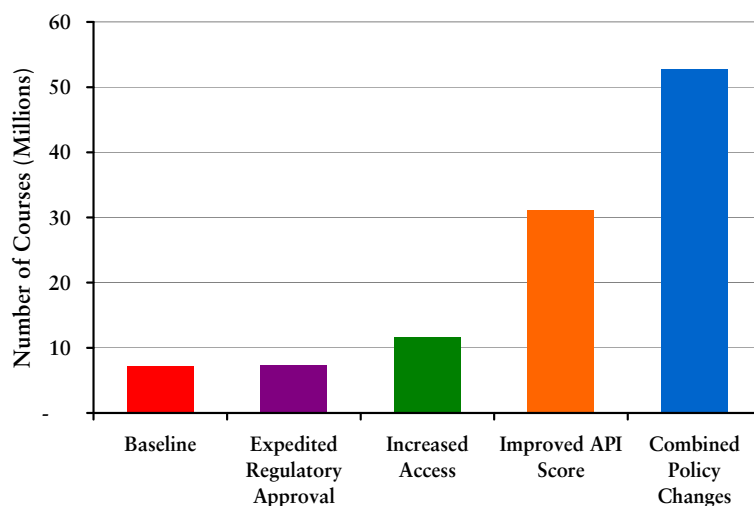
Table 1. Relative contribution to cumulative demand of private versus public initiatives

Market / Programme		Vaccine Profile Scenarios		
		Demand in millions of courses		
		Low	Medium	High
Private		24.0	24.4	49.8
Public	High Risk	-	196.6	162.9
	Low Risk	-	-	575.6

Demand and the potential effects of policy change in India

- For vaccines of medium and higher efficacy (50% and 70% respectively), peak annual demand in India from the combination of public sector programmes and the private market is projected to range between 15.2 million and 41.5 million courses per year, depending on the vaccine's profile (i.e. level of efficacy, duration of protection, and price per dose).
- If the epidemic maintains its current pace, average baseline demand over 30 years is likely to be around 7 million courses per year. Should the epidemic worsen significantly, an additional 46 million courses may be needed each year (as compared to the medium vaccine efficacy forecast) to halt further increases in new infections.
- Efforts to expedite regulatory processes, improve infrastructure and remove political constraints could increase demand for and access to an HIV vaccine to nearly 53 million courses each year over a 30-year period (Figure 2).
- However, without significant increases in financial investment by the GOI or international donors to fund such initiatives, resource forecasts suggest that almost two-thirds of the potential access gains will not materialize.

Figure 2. Effects of policy changes on annual demand (Baseline is equivalent to demand in medium profile scenario)



A call to action: Implementing policy change can increase demand and access

- To achieve the aforementioned increases in demand and access, much lead time is required to foster dialogue and implement policy change. An opportunity currently exists to engage donors and Indian healthcare system officials in such dialogue, using evidence-based policy research such as this forecasting model.
- This model could help guide strategic actions to streamline regulatory systems, improve healthcare capacity and infrastructure, and increase political will and financial commitment. Such actions may include:
 - Ensuring India's continued participation in discovery and development activities of first-generation HIV vaccines beyond current Phase I trial involvement to expedite regulatory approval.
 - Enhancing existing vaccine delivery systems or creating new, more appropriate delivery infrastructure in advance to accelerate the introduction of public HIV vaccination programmes.
 - Scaling up delivery and outreach infrastructure (e.g. improving resources available to NGOs) for expected target populations of an HIV vaccine to increase coverage.
- Policy changes like these could help speed the development of and eventual access to safe and effective preventive HIV vaccines for use throughout India and the rest of the world.

Full citations for this study can be found in the new IAVI Policy Research Working Paper, *Forecasting Demand for Preventive HIV Vaccines in India*. This and other IAVI policy research publications are accessible online at www.iavi.org.

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