Developing AIDS Vaccines

Policy Perspectives

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• Tremendous scientific successes in treatment and prevention has strongly contributed to the progress that today allows us to contemplate the end of AIDS

• Vaccines will be a critical component in our fight to ‘Get to Zero’ and to ‘Stay at Zero’, and in making sure no one is left behind

• The world looks at you as scientists and researchers to overcome the challenges in developing a vaccine

• And we also look at you to advocate for continued support and funding for this life-saving work
The end of AIDS is in sight

A rise in people receiving treatment from 1.3M in 2005 to 9.7M in 2012, and increased implementation and success of prevention approaches, reduced HIV infections to 2.3 M

Annual infections with HIV and AIDS-related deaths globally over time [M]
But major challenges persist to ‘Get to Zero’

• There are still 2.3M new infections every year with rates still growing in specific populations and regions

• Population growth could lead to a net increase in new infections in spite of the current decline, at least in some countries, regions or areas

• Access to available prevention and treatment remains challenging for specific populations and regions

• Enrollment and adherence targets for current treatment and prevention approaches have been difficult to meet

• Annual funding for fighting HIV/AIDS in LICs/MICs is stagnant at around $17B compared to the $23B needed
Progress is slow among key populations and vulnerable groups, and in specific regions

- **Young women** have HIV infection rates twice as high as young men globally.

- **Young people** adhere less to condom use (Ivory Coast, Niger, Senegal, Uganda) and have more sexual partners (Rwanda, South Africa, Uganda, Tanzania, Zimbabwe,...)

- **Transgender women** have almost 50 times the odds of HIV infection compared to male and female counterparts.

- In Uganda, Swaziland and Zambia, 7–11% of new infections are thought to be attributable to *sex workers, their clients and clients’ regular partners*.

- **Men who have sex with men** represent the largest source of new infections in Latin America, ranging from 33% in Dominican Republic to 56% in Peru.

- **Injectable drug users** account for 1/3 of all new HIV infections occurring outside sub-Saharan Africa.

- The HIV incidence among the highly mobile and/or remote *fishing communities* around Lake Victoria remains high (e.g. at 5% in Uganda).
The UNAIDS Investment Framework

2011 Base Case
Constant rate of programmatic coverage at 2011 levels

2011 Investment Framework (IF)*
Scale up key interventions to more than halve new HIV infections and deaths in LICs/MICs to 1M new infections and 1M deaths per year by 2015
* When adjusted for infection rates from fall 2012 (as compared to estimations from earlier in 2011), the infection rate would decrease more slowly and would level of at around 1.4M in 2015

2013 Investment Framework Enhanced (IFE)
Updates the IF to assume target coverage levels are achieved by 2020, to reflect new WHO guidelines for anti-retroviral treatment, and to extend projections to 2050

Modeling project - Futures, IAVI, AVAC, based on UNAIDS work in progress
The impact of an AIDS vaccine* within the UNAIDS Investment Framework

* An illustrative vaccine with an assumed efficacy of 80%, not representative of any specific candidate in development

Modeling project - Futures, IAVI, AVAC, based on UNAIDS work in progress
The impact of a vaccine will be highly dependent on its effectiveness

Infections Averted by Vaccines year by year depending on Vaccine Effectiveness [%]  
(Based on 50% Scale up of Investment Framework Enhanced, IFE)

Modeling project - Futures, IAVI, AVAC, based on UNAIDS work in progress
Increasing effectiveness will significantly increase cumulative reduction of infections.

![Bar graph showing infections averted by vaccines depending on vaccine effectiveness, 2013-2050](image)

Infections Averted by Vaccines depending on Vaccine Effectiveness, 2013-2050

Modeling project - Futures, IAVI, AVAC, based on UNAIDS work in progress.
Vaccines are transformative

Only clean drinking water can rival vaccines at public health benefit. Even antibiotics cannot.

Millions saved from death/disability since mid-20th century

For young people, women and others most at risk, vaccines could be...

• used regardless of partner consent
• used before sexual debut
• distributed as part of broader public health campaigns
  ➢ Immunization programs
  ➢ Sexual health and family planning programs
• a means to reduce stigma and to improve access to basic health care
The funding for vaccine R&D is stagnant

Investing to End the AIDS Epidemic: A New Era for HIV Prevention Research and Development.
NIH is the biggest funder, followed by BMGF, MHRP, USAID and Biopharma

Investing to End the AIDS Epidemic: A New Era for HIV Prevention Research and Development.
Conclusions

• The end of AIDS is in sight thanks to the tremendous scientific successes in treatment and prevention, and thanks to significant global investment

• Vaccines are needed in combination with other measures to ‘Get to Zero’ and to ‘Stay at Zero’, and to make sure no one is left behind

• To bring a vaccine to market we need to persist and continue to innovate to overcome the scientific and technical challenges

• Adequate levels of support and funding for this critical work will require continued strong advocacy
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