Adapting to Realities: Trends in HIV Prevention Research Funding 2000 to 2008

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OBJECTIVES:

- To develop estimates of 2008 financial investments and expenditures related to HIV vaccine research and development (R&D), and policy/advocacy; and
- To analyze trends since 2000 in investment, resource spending, and levels of public sector financial support.

BACKGROUND:

Since 2004, the HIV Vaccines and Microbicides Resource Tracking Working Group- composed of the Alliance for Microbicide Development (AMD), AIDS Vaccine Advocacy Coalition (AVAC), International AIDS Vaccine Initiative (IAVI) and the Joint United Nations Programme on HIV/AIDS (UNAIDS)- has employed a comprehensive methodology to track annual resource trends in preventive HIV vaccine research and development (R&D) that can be compared from year-to-year and across funders.

METHODS:

Data were collected on the full range of activities related to preventive HIV vaccine R&D. Primary funders were asked to provide data on annual disbursements, which more accurately measure levels of investments than by tracking financial commitments.

In addition to annual disbursements, we also tracked expenditures (when available), which are defined as the resources directly spent on R&D activities by funding recipients in a particular year.

To minimize double-counting, we distinguished between primary funders and "intermediary" organizations. Intermediary organizations receive resources from multiple funders and use these resources to finance their own work, as well as the work of others. All identified primary funders were categorized by sector as public (such as government research bodies, international development agencies and multilateral organizations), philanthropic (foundations, charities and corporate donors) or commercial (pharmaceutical and biotechnology companies).
Resources were allocated to five categories: Basic Research, Pre-clinical Research, Clinical Trials, Cohort & Site Development, and Advocacy & Policy, based on the information provided by the intermediaries and/or funders.

RESULTS:

Over the nine-year period from 2000 to 2008, there has been a marked increase in the level of investment in preventive HIV vaccine R&D. In 2008, however, investment in vaccine R&D declined for the first time since the Working Group began tracking funding in 2000 In 2008, total global investment was an estimated US$868 million, a 10% decrease over 2007 funding levels. The decline in commercial-sector funding accounted for 61% of this decrease, and the decline in NIH investment accounted for almost all of the remaining 42%. Even with this decline, US public-sector funding still accounted for 71% of the total investments. public-sector funders provided approximately 84% (US$731 million) of the funds allocated to preventive HIV vaccine R&D. The philanthropic sector provided around 12% (US$104 million), and the commercial sector (pharmaceutical and biotechnology companies) accounted for the remaining 4% (US$33 million).

Figure 1. *Global Funding for Preventive HIV Vaccine R&D in 2008 by Sector*

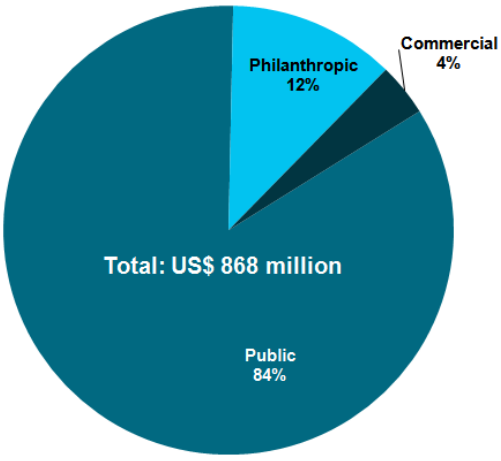


Figure 2. *Trends in Preventive Vaccine R&D Sources - 2000-2008*

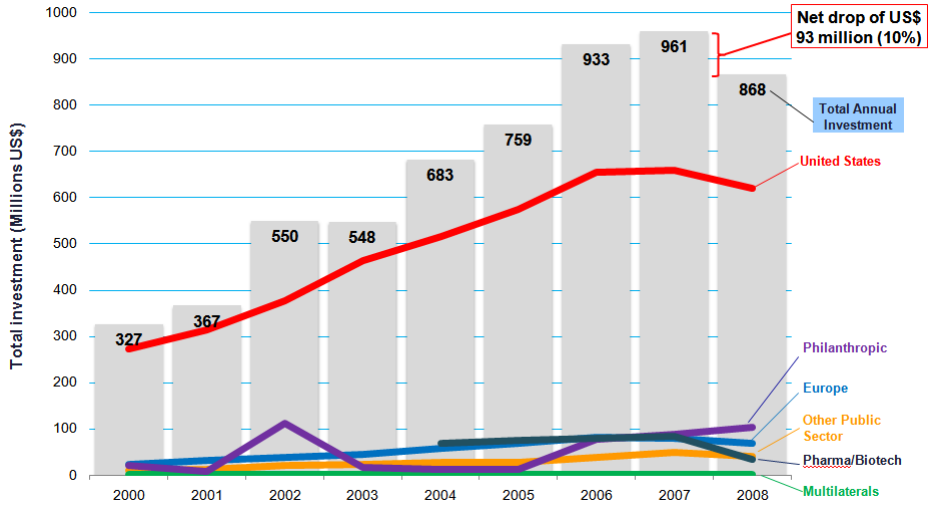
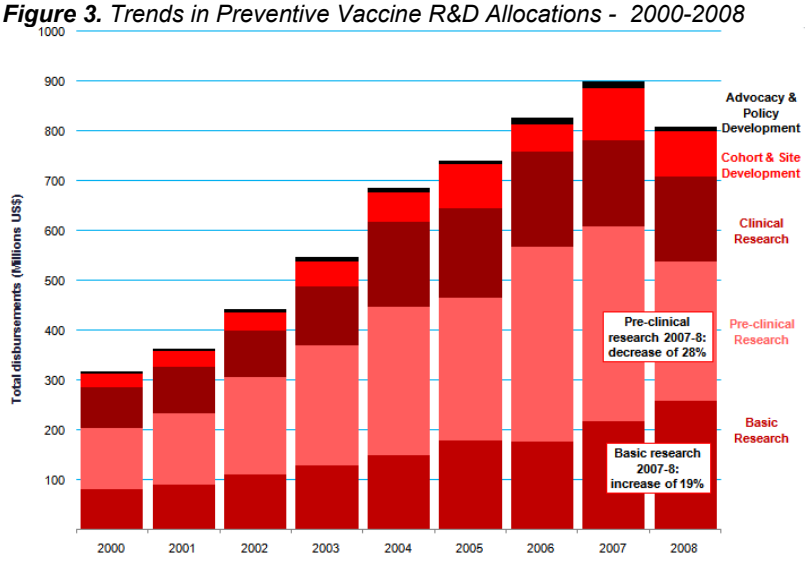


Figure 3. *Trends in Preventive Vaccine R&D Allocations - 2000-2008*



Because not all data from funders permits the allocation according to these five categories, 2008 percentages were estimated from a US$808 million subset that did permit such allocations.

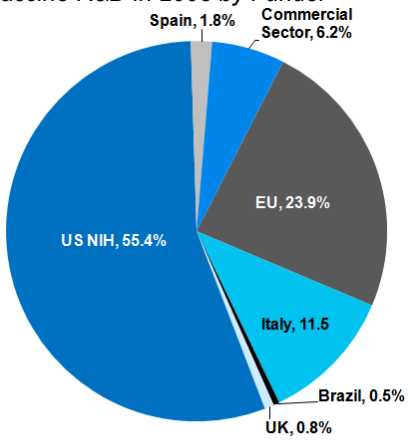
Over the past seven years, annual funding from the combined public and philanthropic sectors (the non-commercial sectors) increased 155%, from US$327 million in 2000 to US$834 million in 2008.

Between 2007 and 2008, European funders decreased their commitments to preventive HIV-vaccine R&D from US$79 million to US$69 million. Countries including Brazil, Canada, India, Russia, South Africa and Thailand, continued to provide notable support as well, although investments totaled US$41 million in 2008, an decrease from US$49 million in investment in 2007.

For 2008, spending by the public and philanthropic sectors on preventive HIV vaccine R&D was allocated to five categories. The categories with the largest shares were basic research (32%) and pre-clinical research (34%). The others were support for clinical trials (21%), cohort and site development (11%), and advocacy and policy development (<1%). Basic research investment increased 19% from 2007 to 2008, while pre-clinical research investment decreased by 28% over the same period.

Therapeutic HIV vaccine R&D received an estimated US$23.2 million in 2008, with the US contributing 53% and Europe, in particular the European Commission and Italy, contributing 40%. In 2008, the Italian National Health Service (ISS) began recruitment for a new trial of its Tat-based HIV vaccine, which has also been under study for several years. European funders provide a greater percentage of the total support for therapeutic HIV vaccines (45%) than for preventive HIV vaccines (8%). Therapeutic HIV vaccines also received modest commercial investment in 2008 from pharmaceutical companies.

Figure 4. *Resources for Therapeutic HIV Vaccine R&D in 2008 by Funder*



Total: US$ 23.2 million

DISCUSSION:

Decreases in funding from 2007 to 2008 may reflect adjustments in scientific priorities away from certain approaches, the beginnings of an escalating economic downturn, cyclical funding for projects, or even shifting of funding away from HIV/AIDS. The outcomes of the halted Step and Phambili vaccine trials in 2007 accelerated a shift by the US National Institutes of Health (NIH) in its HIV vaccine research priorities toward basic research. These trial outcomes also appear to have significantly reduced commercial investment in HIV vaccines as well. From 2006 to 2008, funding for basic research into HIV vaccines increased from 21% to 32% of all expenditures, while pre-clinical research went from 43% to 34% and clinical-trial investment remained essentially flat, decreasing from 23% to 21%. These changes suggest that funds were reallocated to basic research from pre-clinical research. A further reassessment of scientific priorities may also occur when the results from the Phase III trial of the ALVAC/AIDSVAX vaccine combination, being tested in Thailand, are announced.

In 2008, the Working Group identified the key goal of projecting future investment needs for HIV vaccines R&D. This remains unmet need for the field. The most recent estimates of resource needs prepared in 2004 for HIV vaccines do not reflect current costs and research priorities. Development of agreed-upon scientific plans for each field will be necessary for estimating future investment needs. Funding can then be linked more effectively to scientific priorities, and resource needs for future HIV vaccine R&D can be assessed systematically. The Global HIV Vaccine Enterprise is revising its scientific plan, which is a critical part of this process. Such planning will equip researchers, product developers, civil society, advocates, and other stakeholders to better address questions about the need for HIV vaccine research and its direction as we enter a time of reduced resources and competing priorities.

ACKNOWLEDGEMENTS:

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The HIV Vaccines and Microbicides Resource Tracking Working Group is composed of the AIDS Vaccine Advocacy Coalition (AVAC), Alliance for Microbicide Development (AMD), International AIDS Vaccine Initiative (IAVI), and the Joint United Nations Programme on HIV/AIDS(UNAIDS). Please visit www.hivresourcetracking.org for a copy of the full report Adapting to Realities: Trends in HIV Prevention Research Funding 2000 to 2008.