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Investing in Global Health R&D

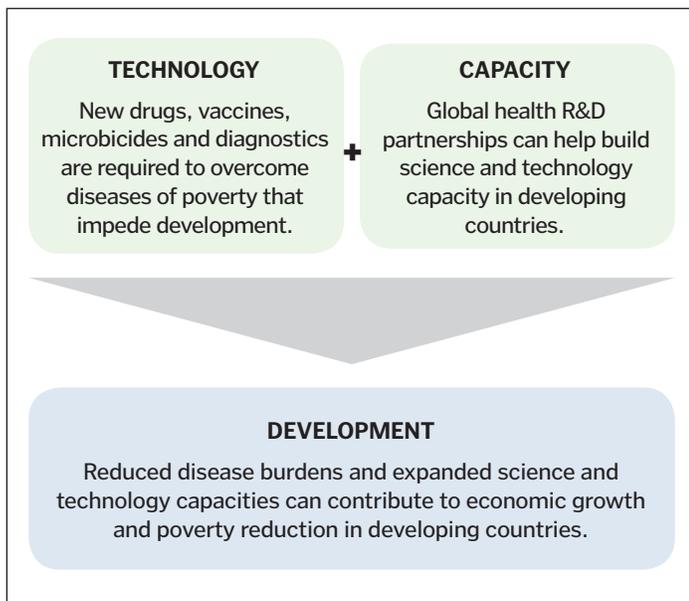
A Strategy for Economic Growth in Developing Countries

“Now is the time to think strategically, and across sectors and boundaries, about how we can better deploy science, technology, and innovation in the service of humanity, to advance development in ways that can dramatically and positively change people’s lives.”

—Rajiv Shah, USAID Administrator

John Holdren, Director of the White House Office of Science and Technology Policy
Huffington Post, 2010

The role of science, technology and innovation (ST&I) in spurring development in low- and middle-income countries (LMICs) has taken center stage in recent years, with developing country governments, donor agencies and multilateral organizations all increasingly focusing on ST&I as a central component of development strategy. The International AIDS Vaccine Initiative (IAVI) believes that research and development (R&D) for diagnostics, therapies and preventive tools including vaccines for diseases of poverty is a critical element of the ST&I for development framework. We call for enhanced support for Product Development Partnerships (PDPs) as vehicles for both accelerating development of urgently needed new global health technologies and maximizing the economic benefits of health R&D in LMICs.



Health Drives Development

Health is a major determinant of a country’s economic growth and level of poverty. High burdens of disease in LMICs are a barrier to economic growth, shrinking the workforce and lowering productivity, both of which also discourage foreign direct investment. Improving health, particularly for diseases that disproportionately afflict the poor, promotes sustained and equitable economic growth and poverty reduction.

- For every year increase in average life expectancy, countries achieve an average 4% increase in GDP per capita (Bloom et al, 2004).
- 10-15% of economic growth in developing countries between 1960 and 1990 can be attributed to reductions in mortality (Jamison et al, 2005).

New Health Technologies are Urgently Needed

While improvements in income, education, women’s empowerment and other social determinants are major contributors to health gains, research suggests that the development and diffusion of new knowledge and new technologies, such as vaccines and drugs, account for at least two-thirds of the 20th century’s improvement in health status (Jamison, 2006). Health technologies have contributed to development by reducing disease incidence, mortality and severity. Additional new health technologies are urgently needed to further reduce disease burdens in developing countries.

- Oral rehydration therapy reduced the annual number of child deaths due to diarrhea by 67% over a 20-year period, saving 3.1 million lives per year (Pierce, 2001).
- The smallpox vaccine successfully eradicated the disease, resulting in an annual savings of US\$ 1.35 billion in expenditures to control smallpox globally (Levine, 2004).

Global Health R&D Contributes to Economic Growth

It is necessary to remove barriers to development—such as disease—to achieve sustained and equitable economic growth. But development also requires building strong economies capable of generating and distributing wealth. Such economic transformation increasingly depends on the ability of countries to use and generate scientific and technological advances. Thus, building ST&I capacities in developing countries is increasingly seen as an important component of development strategy. The health R&D sector can be a major contributor to development in LMICs, both by developing and facilitating access to new health technologies and by strengthening ST&I capacities through research partnerships.

- *A review of trends in investments in R&D and GDP per capita between 1960 and 2000 found an average return on R&D investment of 78%, with some developing countries seeing returns of over 100% (Lederman, 2003).*
- *R&D investments and partnerships in newly innovating developing countries have sharply increased, and as a result non-OECD economies account for a sharply growing share of the world's R&D – 18.4% in 2005, up from 11.7% in 1996 (OECD, 2008).*
- *Even in low-income countries, new initiatives such as the New Partnership for Africa's Development and the African Network for Drugs and Diagnostics Innovation seek to strengthen ST&I capacities to build local health R&D systems, both to increase access to essential health products and as a driver of economic development.*

PDPs Maximize Economic Impact of R&D

PDPs such as IAVI play a key role in accelerating R&D of new health technologies through strategic collaborations with private and public sectors from both developed and developing countries. In 2009, PDPs had nearly 150 biopharmaceutical, diagnostic and vector-control candidates in various stages of development, including 32 in late-stage clinical trials (BCG, 2009). PDPs also contribute to strengthening ST&I capacities by working in close partnership with developing countries, building laboratories, training researchers, integrating local researchers into global knowledge networks and strengthening national legal, regulatory and policy systems. With increased political and financial support, PDPs can contribute to international development in two fundamental ways: by accelerating development of and access to new health tools for diseases of poverty, such as an AIDS vaccine; and by working to strengthen ST&I capacities among LMIC partners.

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An AIDS Vaccine for Development

AIDS is a barrier to development

- AIDS has decreased life expectancies and economic growth in highly impacted countries (Hacker, 2004).

An AIDS vaccine offers hope for controlling and ultimately ending the pandemic

- A 70% effective vaccine given to 40% of the adult population in LMICs could avert 41% of infections over 15 years, even accounting for full scale-up of all existing interventions (IAVI, 2009).

AIDS vaccine R&D contributes to ST&I capacities in LMICs

- For example, IAVI invests in research partners in India and sub-Saharan Africa, such as the Uganda Virus Research Institute (UVRI). Due in part to IAVI's investment in its clinical and laboratory infrastructure and human resources, UVRI has become a reference laboratory for other international research networks.



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