

RETURN ON INNOVATION

Why global health R&D is a smart investment for the United States

KEY FINDINGS



Key findings



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This report provides an in-depth analysis of US government funding for global health research and development (R&D), as well as analysis of health impact and economic returns from these investments. First, it looks at US government investments in global health R&D over time and outlines funding trends, including implications of emergency R&D investments versus sustainable funding. It also looks at key US agencies fueling research efforts and examines their contributions to novel global health technologies. Next, the report analyzes the health impact of tools supported by US government investments, with case studies highlighting treatments delivered, lives saved, and cost savings. Finally, it considers direct returns to the United States from government investments in global health R&D, including economic growth, job creation, and American health security. We hope this report will inform Congress, Executive Branch, and other key stakeholders as they make policy and budget decisions that affect the future of US leadership in global health R&D.

US government investments in global health R&D are indispensable to developing new drugs, vaccines, diagnostics, and other tools for poverty-related and neglected diseases and health conditions.

- Between 2007 and 2015, the US government invested nearly US\$14 billion dollars in R&D for global health.
 - In comparison, in 2015 alone, the US government spent \$1.05 trillion on Medicare and health, \$609 billion on the military, and \$102 billion on education.
- Despite relatively limited investment, US government support was essential in helping advance 42 new technologies approved since 2000 – including 11 new products for malaria, 10 for tuberculosis (TB), and 1 for HIV/AIDS.
- It has also supported 128 promising products in late-stage development – including 103 vaccines, drugs, and diagnostics for neglected diseases; 11 products for Ebola and select viral hemorrhagic fevers (VHFs); and 14 novel technologies for women’s health.

US government investment in global health R&D is critical to respond to market failure. The private sector alone will not fill this gap.

- There is a market failure for new drugs, vaccines, diagnostics, and other tools for neglected diseases. Because these diseases primarily affect people in some of the world’s poorest places, there is little commercial incentive for the private sector to develop these tools.
- US government investment is critical to jumpstart research for urgently-needed health tools and to incentivize private sector engagement by de-risking investment.
- The US government – including the National Institutes of Health (NIH), Centers for Disease Control and Prevention (CDC), Biological Advanced Research and Development Authority (BARDA), Department of Defense (DoD), and US Agency for International Development (USAID) – also leads the world in scientific and development expertise to effectively conduct global health R&D and demonstrates the best of American innovation.

The new tools advanced by the United States are saving lives and money by lowering healthcare and treatment costs around the world. US-supported tools in the pipeline hold similar promise.

- A 50-cent meningitis A vaccine supported by USAID, CDC, NIH, and the Food and Drug Administration has prevented 673,000 cases of meningitis A and 378,000 deaths, and saved 63,000 children from lifelong disability. By 2020, this 50-cent vaccine is predicted to have saved \$9 billion dollars treating meningitis A.
- NIH and USAID helped develop two new pediatric treatments for malaria. For just one of these medicines, over 300 million treatments have been distributed, saving the lives of an estimated 750,000 children.
- A late-stage HIV vaccine candidate supported by NIH and DoD is currently advancing through clinical trials. A 70% effective vaccine is predicted to nearly halve the number of new HIV infections annually in its first decade of use.

US investments in global health R&D also have direct economic benefits for the US economy, fueling job creation, leveraging private sector funding, and promoting cost savings.

- In 2015, 89 cents of every US government dollar directed to global health R&D was invested within the United States.
- Between 2007 and 2015, US government investment in global health R&D injected \$12 billion into the American economy – \$1.5 billion in 2015 alone – helping provide jobs for American researchers and supporting US companies.
 - Between 2007 and 2015 this investment is estimated to have created nearly 200,000 new jobs and generated an additional \$33 billion in economic output as it cycled through the economy.
- Every \$1 NIH spends on basic research is estimated to generate an additional \$8.38 of industry investment over the next eight years. This means that by 2023, the US government's 2015 investment in global health basic research alone will spur nearly \$4 billion in additional industry R&D investment for global health that would have not happened independently.
- Forward-thinking investment in R&D has significant cost savings over long-term costs of treatment or emergency investments during a disease outbreak.
 - Twenty-six million dollars invested in polio vaccine R&D resulted in cost savings of \$180 billion on polio treatment in the United States alone since the 1950s.
 - Large-scale global disease pandemics could cost the global economy more than \$60 billion a year, while investing in the R&D needed to protect against these outbreaks would cost only a fraction of that – \$1 billion – each year.

Despite these results, there is a large and growing gap between increasing global health risks and declining levels of investment in R&D.

- In 2015, the United States invested just \$1.7 billion in global health R&D – less than one-tenth of one percent (0.0088%) of the nation's gross domestic product (GDP) for that year.
- US spending on global health R&D has been largely stagnant or declining since peaking in 2009 (excluding emergency investments in Ebola in response to the 2014 outbreak in West Africa).
 - The United States has cut funding to neglected disease R&D in five out of the last six years, despite increasing frequencies of global pandemics, growing antimicrobial resistance, and heightened abilities for diseases to cross borders.
 - Without emergency investments in Ebola, US 2015 investments in global health R&D are the lowest ever since tracking began in 2007. It currently invests a quarter of a billion dollars less than it did in 2012.
- Globally, only 1-2% of health research funding is directed to neglected diseases and health conditions that put millions of lives at risk.

US investment in global health R&D is also vital for protecting American health and global health security.

- The recent devastating outbreaks of Ebola and Zika make it clear that diseases know no borders and demonstrate how continued underinvestment in R&D has left America and the world vulnerable, with no tools to prevent, diagnose, or treat these and other diseases that threaten global and American health.
- The 2014 Ebola epidemic in West Africa claimed more than 11,000 lives and cost the United States about \$3 billion in efforts to boost domestic preparedness and contain the outbreak at its source. If an Ebola vaccine had been available, the cost and reach of the epidemic would have been far less.
- Many other debilitating diseases have received far less publicity but also put American health at risk.
 - Chagas' disease, a debilitating disease endemic in Latin America, currently infects as many as 300,000 people in the United States. Due to limited R&D investment, currently available tools to diagnose, treat, and prevent Chagas' disease are inadequate. As a result, Chagas' disease costs the United States economy an estimated \$900 million annually.

One-time, emergency investments cannot replace sustainable, forward-thinking funding for global health R&D.

- Emergency investments in R&D during a health crisis can accelerate promising research but have only limited effect in delivering new tools needed during an outbreak.
- Emergency Ebola investments succeeded in accelerating a promising vaccine candidate only because it built on US government investments in research efforts from years earlier – research that was then suspended due to budget cuts. Had those investments been sustained, a vaccine may have been available sooner and could have saved thousands of lives and billions of dollars.
- Sustainable funding for R&D is critical to understand endemic and emerging pathogens, have a strong pipeline of medical countermeasures, and accelerate research to have tools ready when needed to prevent an outbreak from spreading to a deadly pandemic.

View the full report at www.ghtcoalition.org.



Global Health Technologies Coalition

GHTC is a coalition of more than 25 nonprofit organizations advancing policies to accelerate the creation of new drugs, vaccines, diagnostics, and other health tools that bring healthy lives within reach for all people. GHTC works to save and improve lives by advancing solutions to accelerate the development of new health technologies to address neglected global diseases and health conditions.

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