

Centers for Disease Control and Prevention

The Centers for Disease Control and Prevention (CDC) protects people at home and abroad through global disease surveillance; rapid outbreak response; training of epidemiologists; and the research and development (R&D) of diagnostics, drugs, and other prevention and surveillance technologies to combat infectious diseases. Within the global health R&D ecosystem, CDC is distinguished by its scientific and technical capacity, which equips it to help other nations build laboratory systems, bolster public health workforces, and create knowledge-sharing networks—each of which helps in the monitoring of neglected and emerging diseases and provides the infrastructure within which research can happen. This capacity makes CDC an integral part of the global health R&D ecosystem.

Several centers and divisions at CDC share responsibility for the agency's global health R&D work. Each of these centers, and CDC overall, has historically been underfunded, operating on tight and relatively stagnant budgets—a trend that has only worsened over the past decade. These challenges have become especially acute during COVID-19, which has set back some CDC global health programming and diverted core expertise. In addition, though CDC is a world leading institution in global health expertise, the agency was politicized and undermined in the national and international response to COVID-19 in 2020. With new leadership and fresh, sustainable increases in funding, CDC and its centers could fulfill their potential for global health R&D.



Photo credit: Thailand Ministry of Public Health

Policy recommendations

Increase funding for the Center for Global Health, particularly for divisions with the largest funding gaps.

The CDC Center for Global Health (CGH) provides expertise on immunizations, disease eradication, and public health capacity-building around the globe. Among the far-reaching and high-impact work of CGH, one of its main priorities is to “research, develop, and evaluate new tools and approaches to combat global health threats.” As a global hub for infectious disease research, CGH is uniquely equipped to develop and validate tools for disease surveillance and diagnosis. These tools are critical not only for tracking events of public health importance, such as emerging infectious diseases, but also for monitoring the impact of US global health programs in settings that might otherwise have limited data collection capacity. CGH also operates in some countries where the US Agency for International Development (USAID) does not have a presence, extending the reach of US global health programming.

As a division of CGH, the Division of Parasitic Diseases and Malaria (DPDM) works to protect Americans and those living abroad from malaria and other parasitic diseases that can cause blindness, malnutrition, and disfigurement. One of DPDM’s priorities is to develop tools for detecting, preventing, and eliminating parasitic diseases, with an emphasis on curtailing drug and insecticide resistance. CGH and DPDM specifically are at the vanguard of global health scientific expertise, and, with additional funding, can multiply opportunities for global health R&D.

DPDM’s budget remained virtually unchanged between fiscal years 2004 and 2020, with a modest increase in fiscal year 2018 to \$26 million—resulting in at least a 20 percent drop in real purchasing power from its budget since fiscal year 2004. Strong funding increases are needed at CGH, with an emphasis on DPDM, to restore CDC’s role as a global health R&D leader.



Photo credit: CDC

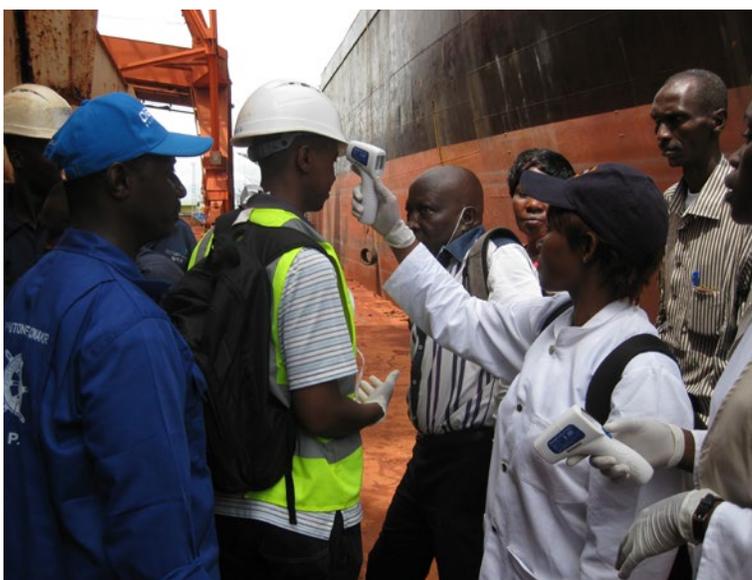


Photo credit: CDC/Emily Jentes

Increase funding for the National Center for Emerging and Zoonotic Infectious Diseases, particularly for divisions with the largest funding gaps.

The CDC National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) and its Office of Advanced Molecular Detection (AMD) provide advanced laboratory services and molecular detection techniques that enable researchers to understand and monitor infectious diseases, identify new infectious diseases of unknown origin, and develop new diagnostic tests and other tools to combat global health challenges. AMD uses DNA sequencing and advanced computing technologies to study infectious diseases, revealing knowledge about their basic biology that is critical to developing diagnostics, drugs, and vaccines against them. For instance, AMD played a vital role in first revealing the genetics of Ebola and Zika.

AMD's genetic sequencing capabilities also support the public health response to infectious diseases by increasing scientific understanding of how they evolve and spread. For example, in response to COVID-19, AMD has led the SPHERES (SARS-CoV-2 Sequencing for Public Health Emergency Response, Epidemiology, and Surveillance) Initiative, a national consortium collecting genetic data on SARS-CoV-2, the virus responsible for COVID-19, so that public health experts can better understand how the virus is evolving and transmitting to inform diagnostic development and public health policy and guidance.

Another core strength of NCEZID is diagnostic development. For example, NCEZID developed Trioplex, a diagnostic that can differentiate Zika, dengue, and chikungunya viruses. NCEZID also supports early-stage R&D of vaccines for infectious diseases such as Nipah virus infection and dengue, Lassa, and Rift Valley fevers.

Despite its essential role in studying the biology of infectious diseases and developing new tools to combat them, appropriations for NCEZID between fiscal years 2016 and 2020 increased only 7 percent. In comparison, appropriations for the National Institutes of Health increased by 29 percent over that same period. At the same time, scientific developments have expanded AMD's technical and analytical potential—provided it is able to strengthen its computing and laboratory infrastructure. Increased funding and capacity strengthening can keep AMD, NCEZID, and CDC at the scientific frontier.



Photo credit: CDC/Victor Balaban

Increase funding for the Division of Tuberculosis Elimination and the Tuberculosis Trials Consortium.

Prior to the spread of COVID-19 in 2020, tuberculosis (TB) was the world's leading infectious disease killer, impacting individuals and families around the world—including in all 50 states of the United States. The Tuberculosis Trials Consortium (TBTC) is a collaboration of researchers from CDC and other domestic and international partners that conduct research on the diagnosis, clinical management, and prevention of TB infection and disease relevant to improving TB programming, such as that led by USAID. TBTC has a strong record of research success; its clinical trials—which have enrolled more than 14,000 patients and volunteers around the world over the last 20 years—have supported the development and implementation of new lifesaving TB technologies and significantly improved global TB treatment and prevention guidelines, including by developing precision medicine approaches that reduce costs to patients and health care systems. TBTC is operated by the Division of Tuberculosis Elimination (DTBE) within the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Funding to DTBE has been flat for 20 years, resulting in a 49 percent loss in real funding between fiscal years 1994 and 2016. Further, between fiscal years 2005 and 2016, DTBE reduced its share of spending on TB research from 20 percent to 10 percent. Congress needs to sustainably increase funding to DTBE to continue and build on its progress in TB research. This is especially critical now because COVID-19 research, which has benefited from past investments in TB R&D, has redirected respiratory disease control resources and expertise from DTBE and its ongoing TB research. Funding for TB R&D at CDC, in addition to other US agencies, including the National Institutes of Health and USAID, should be increased to reach the United States' fair share funding target as identified at the recent United Nations High-Level Meeting on TB, which would amount to just 0.1 percent of US gross domestic expenditure on R&D.



Photo credit: CDC/Tom Maguire