

Photo credit: U.S. Army/Staff Sgt. V. Michelle Woods

Historically, the Department of Defense (DoD) has focused on developing vaccines, drugs, and other tools for conditions that pose a risk to US national security and service members stationed abroad. American warfighters are often deployed to austere environments with limited health infrastructure and exposure to prominent global health challenges, such as malaria and leishmaniasis, a parasitic disease spread through sandflies. At peak incidence, at least 1 in 20 service members stationed in Eastern Afghanistan from 2001 to 2013 was diagnosed with malaria. Of service members stationed in Afghanistan in 2004, at least 2.1 percent were estimated to have been infected with leishmaniasis. In 2003, during Operation Sheltering Sky, one in five marines deployed to Liberia was diagnosed with malaria within ten days of arrival.

DoD is the only US agency that supports every stage of research and development for health products, from basic research to late-stage clinical development and manufacturing. DoD has a strong record of developing or codeveloping new drugs, vaccines, and diagnostics for infectious diseases, including the development of at least seven Food and Drug Administration (FDA)-approved vaccines; nearly every FDA-approved malaria treatment; and diagnostics for typhus, malaria, and West Nile virus for low-resource settings. The agency also has a rich history of supporting research against antimicrobial-resistant threats, which can complicate the ability to conduct safe surgeries and to treat infections impacting service members.

During COVID-19, DoD, especially via the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRND), has been an instrumental partner with the Department of Health and Human Services, especially with the Biomedical Advanced Research and Development Authority, in co-funding medical countermeasures against the pandemic. Early in the pandemic, JPEO-CBRND supported research into COVID-19 medical countermeasures suitable for low-resource settings, including a single-use COVID-19 rapid diagnostic test and a temperature-stable, needleless vaccine. These contributions demonstrate the potential for DoD to play a more consistent role in global health innovation.

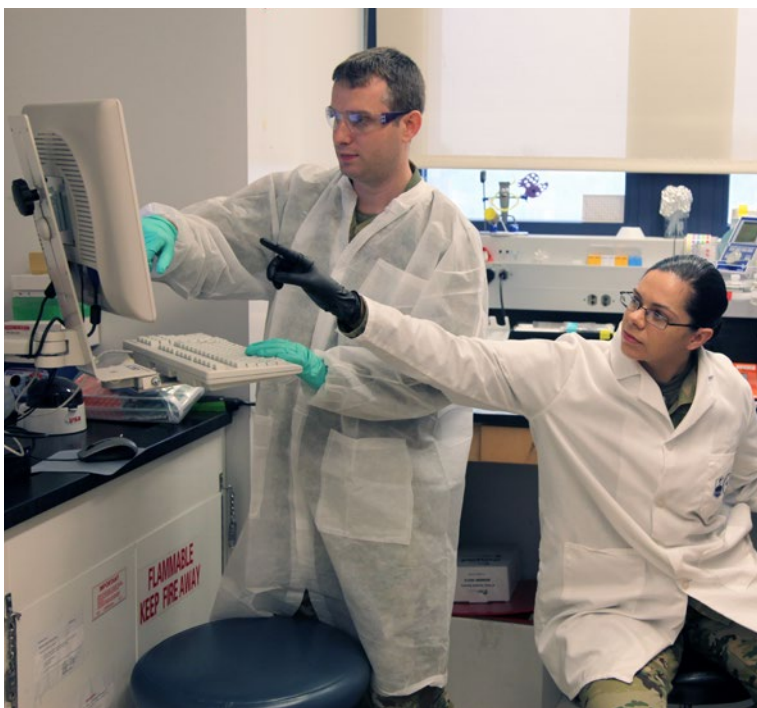


Photo credit: Walter Reed Army Institute of Research

Policy recommendations

Protect malaria and parasitic disease research programs within DoD, potentially through creation of a dedicated funding line.

DoD is perhaps the most influential malaria research institution in the world. It has contributed to the development of nearly every FDA-approved malaria drug, was a key partner in the early development of the first approved malaria vaccine for children, and pioneered seminal research methods that enabled the development of antimalarial drugs and vaccines around the world. DoD's continued leadership and expertise in malaria research is essential for developing the next generation of tools that are needed to protect troop health and defeat malaria globally, including more efficacious malaria vaccines that work in adult populations and new treatments to combat growing antimalarial resistance.

In recent years, however, DoD has reduced funding for its malaria work, particularly its vaccine research conducted through the Walter Reed Army Institute of Research (WRAIR) and Naval Medical Research Center (NMRC). Programs have been shifted and, in some cases, eliminated from funding lines and program elements. In 2019 and 2020, internal, closed-door deliberations at DoD targeted malaria research for elimination. Shuttering these programs completely would halt decades of DoD's progress in developing new tools for malaria and other parasitic diseases and would ultimately harm troop readiness and protection. Even the threat of closure could forestall scientists from launching or maintaining programs that require sustained, multiyear investment. Internal DoD funding decisions should continue to support research on malaria and other parasitic diseases in line with the military threat assessments that identify malaria as a top-tier infectious disease risk. Congress could consider creating a dedicated funding line for malaria and parasitic disease research at DoD to secure the reliable funding that ambitious scientific projects require.

Retain malaria and tuberculosis on the list of eligible diseases for the Congressionally Directed Medical Research Programs.

The Congressionally Directed Medical Research Programs (CDMRP) within DoD funds high-impact research on a list of priority diseases identified by Congress that affect service members and the American public. What distinguishes CDMRP from other federal programs is that it works with advocates and scientists to identify areas of disease research that have high potential for impact, while ensuring minimal redundancy with research funded by the National Institutes of Health. This includes funding along the full range of research and development, from basic research to clinical development. Historically, malaria and tuberculosis have both been included on the CDMRP-eligible diseases list but have cycled on and off in recent years. Congress should annually include malaria and tuberculosis on the CDMRP list so that research against those diseases can be funded sustainably.



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Increase funding for antimicrobial research programs.

DoD has a long history of supporting the development of new antibiotics through the Defense Threat Reduction Agency (DTRA), the US Army Medical Research and Development Command (USAMRDC), WRAIR, NMRC, and the Defense Advanced Research Projects Agency. Since 2012, DoD has spent at least \$271 million, mostly through DTRA and USAMRDC, on developing traditional antibiotics as well as bacteriophages, peptides, and vaccines—products at the vanguard of antimicrobial resistance (AMR) science. Even with DoD’s contributions, the global research pipeline remains inadequate for meeting a challenge described by the Infectious Diseases Society of America as “one of the greatest threats to human health worldwide.” This research pipeline is thin because there is little commercial incentive for companies to invest. When new antimicrobial products are developed, providers seek to limit their use to prevent AMR from growing and can be reluctant to prescribe a premium drug when an older generic is available. This lack of demand keeps the private sector from investing and warrants public investment. Congress and administration officials should increase DoD’s funding for AMR research to boost the antimicrobial pipeline. Such investment would protect the health of troops while strengthening global health security by preventing a post-antibiotic era that threatens to reverse modern medical advances that depend on working antibiotics, such as cancer chemotherapy, organ transplants, and routine surgeries.



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