



U.S. Army Medical Research Directorate-Africa

One of the Walter Reed Army Institute of Research's overseas labs, USAMRD-A supports Soldier health and world health and serves as a model for effective medical diplomacy, conducting biomedical research, product development, outbreak response and disease surveillance.

USAMRD-A develops and tests improved means for predicting, detecting, preventing and treating infectious disease threats important to the U.S. military and host nations. Headquartered in Nairobi, Kenya, USAMRD-A works with clinical research sites in seven African countries and is known in local communities as the Walter Reed Program. They collaborate with host governments and communities to advance research on endemic diseases such as malaria and HIV, and to help identify and develop countermeasures for emerging infectious disease threats such as Ebola and Lassa fever.

Malaria

The USAMRD-A research network leads malaria and infectious disease diagnostics and immunology studies in conjunction with local government, military, academic and nongovernmental organizations.

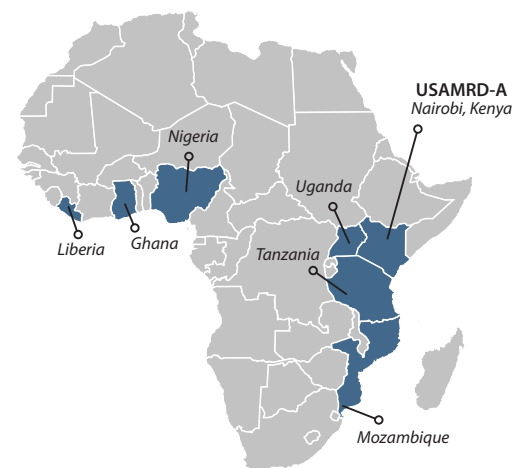
USAMRD-A boasts the premier clinical trials research center in East Africa, capable of on-site clinical microbiology

testing and a major site for Phase I-III clinical trials for new vaccine candidates and treatments. Our team provides timely surveillance on current and emerging antimalarial drug resistance, serving as an early warning system for the global health community.

USAMRD-A also delivers key training throughout Africa for malaria diagnosis, specializing in classical blood smear microscopy and rapid diagnostic tests.

Emerging Infectious Diseases

USAMRD-A's Department of Emerging Infectious Diseases (DEID) plays a key role supporting the Global Emerging Infections Surveillance and Response System (GEIS) and provides technical support to U.S. AFRICOM-led international scientific coalitions and strategic engagement efforts. This encompasses the rapid detection and advanced characterization of endemic, emerging, and novel threats to the force, including vectors and reservoirs of infectious disease transmission.



USAMRD-A research includes:

- HIV/AIDS and Malaria
- Enteric Diseases
- Trypanosomiasis, Leishmaniasis
- Ebola, Marburg and Lassa
- Vector Biology and Rapid Diagnostics

Accomplishments

- Helped develop and test the first efficacious malaria vaccine candidate, RTS,S
- Examined twelve antimalarial drugs and reported on surveillance of emerging antimalarial drug resistance
- Conducted two HIV vaccine trials and many HIV/AIDS therapeutic studies and acute HIV infection studies
- Initiated five Ebola vaccine studies and published one of the first long-term follow-up studies on Ebola survivors

Our team works closely with local partners and militaries on surveillance, diagnostics, training and outbreak response. In the last year, we analyzed thousands of samples for outbreaks such as chikungunya, dengue, Rift Valley fever, cholera and influenza. USAMRD-A scientists also detect and track emerging antibiotic resistant bacteria and in 2018 helped develop the National Antimicrobial Resistance policy and surveillance strategy for Kenya.

WRAIR's Emerging Infectious Diseases Branch (EIDB) is leveraging USAMRD-A's strategic position to study and develop countermeasures for threats including Ebola, Marburg, Zika and Lassa fever and other emerging infectious diseases.

WRAIR and its partner sites have been working to anticipate and pursue the threat of Ebola in Africa since it began the first Ebola vaccine clinical trial there in 2010. Since then, we have conducted three additional vaccine trials for the Zaire strain of Ebola, and a new Phase I vaccine study aimed at the Sudan strain of Ebola began in 2019 in Uganda.

After the West African Ebola outbreak, the U.S. Department of Defense (DoD) pioneered a strategic initiative called the Joint West Africa Research Group (JWARG), which WRAIR helps lead. JWARG is leveraging existing research platforms and partnerships in Nigeria, Ghana and Liberia to improve biopreparedness in the region. Current research efforts are focused on the early identification and characterization of suspected cases of severe infectious diseases and the diagnosis and care of sepsis. A new study to characterizing the epidemiology of Lassa hemorrhagic fever virus is set to begin in Abuja and Lagos, Nigeria.

HIV

The Military HIV Research Program (MHRP) at WRAIR conducts research in Kenya, Tanzania, Uganda, Mozambique and Nigeria. Efforts include HIV cohort development, vaccine studies and research for a functional cure.

WRAIR was one of the first organizations to conduct HIV research in Africa in the 1990s, building on USAMRD-A's longstanding partnerships. This early work helped MHRP scientists identify nearly half of the known subtypes of the virus. Since then, our partner sites have conducted many HIV vaccine and therapeutic clinical studies. Several sites in East Africa also participated in a groundbreaking acute HIV infection study, RV217, which is providing insights into the earliest stages of HIV infection and informing functional cure research.



Several USAMRD-A sites implement the President's Emergency Plan for AIDS Relief (PEPFAR) initiatives via MHRP. PEPFAR provides comprehensive HIV prevention and treatment services to military, civilian and key populations throughout four countries in Africa. MHRP provided more than 3 million people with HIV testing and counseling services in 2018, and currently provides lifesaving antiretroviral therapy to nearly 350,000 people with PEPFAR support.

Enteric Diseases Research

USAMRD-A plays a key role supporting the global effort to reduce the impact of diarrheal disease and protect the U.S. Military during combat and humanitarian missions.

We have been conducting enteric disease surveillance and supporting intervention research for more than 20 years. The Microbiology Hub in Kericho, Kenya is a College of American Pathologist (CAP) accredited laboratory focused on enteric diseases that has become a leader in immunological assessments of enteric infections and responses induced by vaccination.

The Kericho Field Station was chosen by several *Shigella* vaccine manufacturers to conduct three large scale multivalent *Shigella* vaccine trials set to begin in 2019. Funding provided by the Bill and Melinda Gates Foundation and the Wellcome Trust will be used to establish the safety and immunogenicity of several *Shigella* vaccine products. The site, in collaboration with KEMRI, will then play a pivotal role in follow-on field efficacy studies.

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