



**JOINT
WEST AFRICA
RESEARCH
GROUP**

JWARG

**U.S. DOD-LED COLLABORATIVE
INITIATIVE TO STRENGTHEN
BIOPREPAREDNESS**

Infectious diseases are a constant threat to military personnel and civilians. In regions like West Africa, where outbreaks can spread widely and rapidly, clinical and research capabilities are critical to detect and respond to current and emergent pathogens.

The West Africa Ebola outbreak highlighted significant gaps in public health capability and countermeasure availability in the region. In response, in 2015 the U.S. Department of Defense supported a strategic Army-Navy initiative called the Joint West Africa Research Group (JWARG).

Since then, JWARG has worked to leverage existing research platforms and partnerships in Nigeria, Ghana and Liberia to improve biopreparedness in West Africa, focusing on infectious disease research, countermeasure development and biosurveillance.



JWARG Partners

The Joint West Africa Research Group is a collaboration between government, military, academic and non-governmental organizations in the U.S. and Africa, led by:

- Austere Environment Consortium for Enhanced Sepsis Outcomes (ACESO) at the Naval Medical Research Center
- Emerging Infections Diseases Branch (EIDB) at the Walter Reed Army Institute of Research (WRAIR)
- Naval Medical Research Unit 3 Ghana Detachment (NAMRU-3 GD)
- U.S. Army Medical Research Directorate - Africa (USAMRD-A)

Support for JWARG is provided by the Defense Health Program, and research administration by the Henry M. Jackson Foundation for the Advancement of Military Medicine.

Infectious Diseases Research

JWARG activities center on infectious disease research relevant to the West Africa region. A large, multi-site study, RV466, is designed to identify and characterize cases of suspected severe infectious disease in the region in order to guide response efforts and inform countermeasure development. Sites in Nigeria, Ghana and Liberia are also participating in a study that aims to improve understanding of how to best diagnose and care for sepsis patients through early recognition and evidence-based clinical management. Research is conducted across a network of West African clinical sites with support from local reference laboratories.

With these and planned future studies, JWARG aims to strengthen research capabilities in the region to learn more about emerging pathogens and contribute to the development of improved diagnostics, therapeutics and vaccines, which in turn support U.S. DoD goals in pursuit of global health security, Soldier health and force protection.

Building Human Research Capacity

JWARG provides educations and training for scientific and medical personnel in West Africa to support program activities in the region. Training courses conducted to date include:

- Good Clinical and Laboratory Practices (GCLP)
- Clinical Chemistry and Hematology
- Introductory and Advanced Genomics
- Malaria Microscopy
- Clinical Management of Tropical and Emerging Infectious Diseases

Biosurveillance

Early identification of new infectious disease threats is critical to planning response, limiting disease impact and informing countermeasure development. JWARG is collaborating with the African Centre of Excellence for the Genomics of Infectious Disease and the Sabeti lab at the Broad Institute of Harvard and MIT to roll out advanced molecular diagnostics and sequencing on the continent, allowing more rapid dissemination of data on infectious disease threats.

Work with the U.S. Army Medical Research Institute of Infectious Disease is further advancing molecular and serologic diagnostic capability. JWARG partnerships with the American Society for Microbiology and the National Strategic Research Institute/University of Nebraska Medical Center are facilitating development of microbiology capability and enabling surveillance for bacterial pathogens and associated antimicrobial resistance. Interaction with U.S. Africa Command (AFRICOM) informs JWARG surveillance priorities.



Leveraging the U.S. Military's Existing Research Infrastructure

ACESO is an international collaboration of scientists led by the Naval Medical Research Center and dedicated to improving survival of sepsis from all causes in resource limited settings. ACESO works in five countries on three continents to improve clinical management of sepsis and develop host biomarker tests that can identify sepsis and guide treatment.

Partnering closely with the Nigerian Ministry of Defence to implement public health programming and conduct clinical research, WRAIR's efforts under USAMRD-A/Nigeria are based in Abuja. The Institute's Military HIV Research Program began developing research infrastructure and capability in Nigeria in 2005 through the President's Emergency Plan for AIDS Relief. The Emerging Infectious Disease Branch of WRAIR, formally established in 2018, is developing countermeasures to disease threats such as Lassa, MERS, Ebola and Marburg, and planned branch research is to take place at JWARG sites in Nigeria.

NAMRU-3 GD has been conducting research in Ghana since 1998, with a focus on malaria research, surveillance for acute febrile illness, sexually transmitted infections, drug resistant bacteria and influenza. NAMRU-3 GD partners with the Ghana Armed Forces and the Noguchi Memorial Institute for Medical Research in Accra, Ghana.

In Liberia, studies have been performed since 2012 in collaboration with the Armed Forces of Liberia, the National Public Health Institute of Liberia and the Liberian Institute for Biomedical Research.



Clinical Sites

Nigeria

- 68 Nigerian Army Reference Hospital, Yaba, Lagos
- 45 Nigerian Air Force Hospital, Makurdi
- 82 Division Hospital, Enugu
- Ikorodu General Hospital, Ikorodu, Lagos
- Irrua Specialist Teaching Hospital, Irrua

Ghana

- 37 Military Hospital, Accra
- Komfo Anokye Teaching Hospital, Kumasi

Liberia

- Camp EBK Clinic, Monrovia
- Phebe Hospital, Gbarnga
- Kolahun Hospital, Kolahun

Research Laboratories

Nigeria

- Defence Reference Laboratory, Abuja
- African Centre of Excellence for the Genomics of Infectious Diseases, Redeemer's University, Ede

Ghana

- Noguchi Memorial Institute for Medical Research, Accra

Liberia

- Liberian Institute for Biomedical Research, National Public Health Institute of Liberia, Charlesville

