AFROHUN Liberia

AFROHUN WORK IN LIBERIA

Collecting blood samples from people living in & around the national parks to determine their exposure to zoonotic diseases.

liberia@afrohun.org
or
secretariat@afrohun.org

afrohun.org/liberia

AFROHUN Network

Africa One Health University Network (AFROHUN) is an international network, currently in 29 higher education institutions of public health, veterinary medicine/sciences, pathobiology, environmental sciences, medicine and global health, in 10 countries in Africa. The countries are Cameroon, Côte d'Ivoire, Democratic Republic of Congo, Ethiopia, Kenya, Liberia, Rwanda, Senegal, Tanzania and Uganda.

AFROHUN is working to transform the training environment and approaches in universities and allied institutions in Africa, to develop a One Health workforce: a workforce with competency to work across disciplinary boundaries. AFROHUN is building a workforce with competency to predict, detect and respond to the kind of complex health challenges we are increasingly witnessing today. To achieve this transformation, we are reviewing curricula, designing new and exciting experiential learning multidisciplinary training programs, re-tooling teachers and trainers, educating communities on complex health challenges, while engaging national and sub-national governments to domesticate and integrate One Health into national policy and strategic planning.

Participatory outcome mapping (OM) Activity

Our Work in Liberia

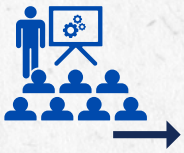
In Liberia, AFROHUN has implemented the five-year STOP Spillover project funded by USAID. The project enhanced the capacity of key institutions in Liberia to understand the factors that contribute to the risk of disease spread from animals to humans and to anticipate and mitigate threats posed by emerging zoonotic diseases.

AFROHUN used participatory outcome mapping (OM) to engage a wide variety of key stakeholders to co-design and co-create activities to support the STOP Spillover project objectives. Under the STOP Spillover project, AFROHUN developed interventions that enhance local capacity to design, implement, and assess future risk reduction approaches. Evidence-based interventions created using integrated design and research to fill knowledge gaps addressed USAID's overarching goal of sustainable stakeholder understanding and ability to reduce the risk of zoonotic viral spillover, amplification, and spread.

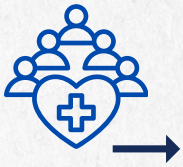
The project focused on addressing zoonotic viruses with pandemic potential, such as Ebola, Lassa, Marburg, Mpox, and coronaviruses, using a One Health approach. The project developed and implemented locally designed interventions, evaluating their social, economic, and environmental effectiveness to reduce spillover risks and enhance future risk reduction strategies.

AFROHUN collaborated with key stakeholders through the One Health Design, Research, and Mentoring (OH-DReaM) working group, which includes representatives from the University of Liberia, the National Public Health Institute of Liberia (NPHIL), the National Reference Laboratory (NRL), the Ministry of Health, the Ministry of Agriculture (including its animal laboratory), and the Liberia Water and Sewer Corporation (LWSC).

Our Impact



Lassa Virus Prevalence and Rodent Movement Study, which investigates Lassa virus prevalence in rodents and their movement patterns across eight communities, revealing the presence of the virus outside the traditional "Lassa belt." After four rounds of trapping, the team captured 360 rodents with a total of 7,568 trap nights, achieving a 4.8% trap success rate. Of the 491 specimens tested, 42 (representing 37 rodents and 2 environmental fecal samples) tested PCR positive for Lassa virus RNA. Rhodamine dye (RD) bait, distributed to community health workers in two of the eight communities, helped track rodent movement by causing their fur to fluoresce under UV light. Additionally, whiskers were collected to assess RD exposure and gather data on rodent movement patterns



Exposure to Zoonotic Diseases in Liberian National Parks, assessing human exposure to zoonotic pathogens such as Lassa, Ebola, Marburg, and others in communities near national parks like Sapo, Gola, and Lake Piso. In December 2024, 300 samples from communities near East Nimba Nature Reserve (ENNR) were tested for Lassa and Ebola virus glycoproteins using the MagPix system. After running the assays, the analysis revealed significant reactivity to Lassa and Ebola viruses, indicating potential exposure or infection. In January 2025, 330 participants were enrolled from communities around Gola National Park for interviews and sample collection, while engagement activities began with communities near Sapo National Park

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Our Impact

Environmental and Wastewater Surveillance, which validates protocols for detecting Lassa virus RNA in food, water, surfaces, and wastewater from health facilities. So far, a total of 340 samples were collected from 30 households (5 per community) across six communities and sent to the National Reference Laboratory (NRL) for analysis. Of these, 8 surface samples from 4 houses in 2 communities tested positive for Lassa virus RNA, demonstrating the effectiveness of the sampling methods used.

Point of Care Diagnostic Test for Lassa Fever, A rapid diagnostic test (SHINE) was validated for Lassa virus detection in collaboration with the Broad Institute. The test will be piloted in health facilities to improve early diagnosis and treatment, addressing delays in centralized testing.

Processing samples collected from surfaces in homes to test for Lassa virus.

Our Impact

Lassa Virus Genome Sequencing, which builds laboratory capacity to sequence Lassa virus genomes, enhancing understanding of its distribution and evolution.

Food/Water Storage and Waste Management, which involves interventions to reduce rodent-human contact including structural barriers, improved waste management, and social behavior change campaigns. Rodent monitoring using trackpads and ultrasonic repellents was conducted, with evaluations planned to assess intervention effectiveness.

Training Healthcare Practitioners, focuses on training healthcare practitioners in Liberia on the detection, diagnosis, and treatment of Lassa fever. Due to the challenge of misdiagnosis, underreporting, and the spread of the virus outside the traditionally recognized Lassa belt, the training aims to enhance the capacity of healthcare workers in both endemic and non-endemic areas.

Collecting wastewater from hospital sewage to test for Lassa virus.

Let's Work Together

Scan Code to Visit our website
or contact us for more information

+256-200-912-673

secretariat@afrohun.org

https://afrohun.org/

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