

Strategies to Prevent (STOP) Spillover

Impact Brief: Liberia

Sampling Food and Household Surfaces to Assess Lassa Virus Transmission Risk

Activity 1.4.6: Sampling food, water, and household surfaces to assess Lassa virus presence and spillover risk.

INTRODUCTION

Mastomys natalensis, the multimammate mouse, is the main reservoir host for Lassa virus and likely the main source of Lassa virus transmission to humans. Zoonotic transmission of Lassa virus is thought to occur through contact with infectious *M. natalensis* tissue or excretions/secretions (e.g., blood, feces, urine, saliva). This can be through direct contact with the reservoir host, or indirectly through contact with food, water, and surfaces contaminated by excretions from Lassa-infected rodents, or through inhalation of aerosolized virus from infectious rodent urine or feces. This activity aims to establish and validate protocols for detecting Lassa virus RNA in environments suspected to have a high level of contamination and may offer critical insights into the risk of Lassa transmission through these routes.



Team members being trained on putting on and removing PPE.



Sample collection in Blaygay Pa Community.

To facilitate this research, preparations included a comprehensive one-day training session for the team and the organization of necessary sampling tools and equipment. The training empowered team members with essential skills and knowledge to efficiently conduct sampling activities and collect accurate data. A total of 340 food and surface samples were gathered from 30 households in six communities, Blaygay Pa, Compound III, Nuoepa, Gbarpa, Phebe Airstrip Community, and Gokai. These samples serve as a valuable resource for subsequent laboratory analysis, enabling the identification of potential pathogens, primarily testing for Lassa virus RNA, and an understanding of the

spillover risks in these communities. Concurrently, surveys with 30 household heads from sampled households were conducted to understand likely levels of contamination of food, water, and household surfaces.

Expected Outcomes

- Results from the assessment of food, water, and surfaces will provide key information regarding their contribution to Lassa virus transmission risk. This information will be critical to the design of interventions

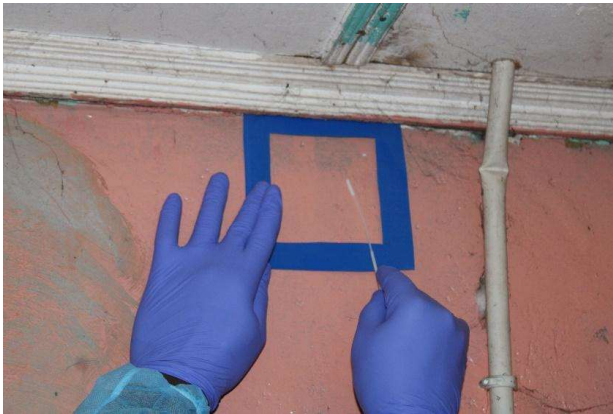
to reduce the risk of spillover from rodents to humans and promote safer practices to avoid contamination from rodents.

Achievements

- Six communities at risk for Lassa fever sampled (Blaygay Pa, Compound III, Nuopea, Gbarpa, Phebe Airstrip Community, and Gokai)
- 340 food and surface samples collected, packaged, and delivered to the National Reference Laboratory
- Survey completed with 30 heads of households on drinking water, food, and hygiene and sanitation

Next Steps

- Work closely with the laboratory to analyze samples for Lassa virus RNA
- Plan for hospital sewerage sampling
- Design intervention based on findings



Swabbing a floor.



Swabbing a table.



Food (biscuit) partly eaten by a rodent.



Conducting a survey with a household head in Compound III.