

# Environmental and Behavioral Determinants of Lassa Fever

A qualitative exploration among communities and health care workers in Tonkolili and Kenema districts, Sierra Leone.

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# Table of Contents

<b>Table of Contents</b> .....	<b>i</b>
<b>Acknowledgements</b> .....	<b>iii</b>
<b>Acronyms</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>1</b>
Study Aims and Objectives.....	3
<b>Methods</b> .....	<b>5</b>
Study Design .....	5
Study Sites.....	5
Sample Size and Sampling.....	5
Study Participants .....	5
Inclusion Criteria .....	6
Exclusion Criteria .....	6
Research Team.....	6
Data Collection Tools .....	7
Data Management .....	7
Permissions and Ethics.....	7
<b>Results</b> .....	<b>8</b>
Description of the Sample.....	9
Community Context.....	9
Perceptions About Rats in the Community.....	11
Common in Communities .....	11
Destructive.....	11
A Source of Food.....	12
Bush and House Rats are Different.....	13
Risk and Vulnerability .....	14
Perceived Risk .....	14
Perceived Severity.....	15
Risk Groups .....	16
Risk Factors for Having Rats.....	17
Personal Experiences with Rats and Lassa Fever.....	19
Encounters with Rats .....	20

Experiences with Lassa Fever.....	21
Awareness and Knowledge .....	23
Knowledge of Causes of Lassa Fever.....	23
Knowledge of Symptoms of Lassa Fever.....	25
Knowledge of Prevention of Lassa Fever .....	25
Prevention Behaviors.....	25
Activities to Reduce Rats in the Community.....	26
Activities to Prevent Illness and Lassa fever in the Community .....	27
Community Needs.....	28
Community Sensitization .....	28
Sources of Information .....	29
Health Care Worker Experiences .....	29
<b>Discussion and Recommendations .....</b>	<b>32</b>
Community Context.....	32
Knowledge of Lassa Fever.....	32
Risk Perception and Behaviors for Lassa Fever.....	33
Prevention Behaviors.....	34
Appropriate Care-Seeking.....	34
Information Sharing .....	35
Social and Behavior Change Recommendations.....	35
Increasing Early Care-Seeking Behaviors at Health Facilities.....	35
Increasing Knowledge of Lassa Fever .....	36
Increasing Risk Perception for Lassa Fever .....	36
Developing Community-Based Risk Prevention Strategies.....	37
Motivating Individuals for Action by Framing Rats and Lassa Fever Within Community Perceptions .....	37
Developing Effective Community Response Mechanisms .....	37
<b>References .....</b>	<b>38</b>

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# Acronyms

CCP	Johns Hopkins Center for Communication Programs
DHMT	District Health Management Team
HCW	Health care worker
IDI	In-depth interview
KGH	Kenema Government Hospital
MOHS	Ministry of Health and Sanitation
NGO	Nongovernmental organization
OHRC TWG	One Health Risk Communication Technical Working Group
USAID	United States Agency for International Development
WHO	World Health Organization

# Introduction

Local health authorities have classified Lassa fever as a priority zoonotic disease in many sub-Saharan African countries, including Sierra Leone. While much research has been published about Lassa fever, it has primarily focused on clinical diagnosis and epidemiological surveillance. Few studies are available globally on the sociocultural and behavioral drivers of Lassa fever, and particularly from Sierra Leone.

Lassa fever is an acute viral zoonotic hemorrhagic illness caused by the Lassa virus, characterized by fever, muscle ache, sore throat, nausea, vomiting, chest and abdominal pain, and bleeding. The World Health Organization (WHO) reports that about 80% of people who contract Lassa fever have no symptoms. However, one in five infections result in severe disease with a case fatality rate of about 15% among those hospitalized (WHO, 2017). The disease was first described in the 1950s in Sierra Leone and identified as a viral infection in 1969 (Ilesanmi et al., 2015). The primary mode of transmission to humans occurs through direct or indirect contact with rodent body fluids such as urine and feces. However, some studies have cited saliva, blood, and rat bites as additional modes of transmission, and once a human is infected, human-to-human transmission also may occur (WHO, 2017). Although efforts to manage Lassa fever in Sierra Leone have been ongoing on the long term, the illness remains endemic in some districts, cases are widespread throughout the county, and occasional localized outbreaks of the illness do occur.

In spite of endemicity in many West African countries, detailed knowledge of Lassa fever among community members is surprisingly low. Awareness of Lassa fever illness may vary even in high endemicity areas. A study conducted in Ebonyi State, Nigeria showed that in areas with high Lassa fever transmission, participants had a high level of awareness of Lassa fever but only basic knowledge of its signs, symptoms, and modes of transmission (Usuwa et al., 2020). However, other studies have shown a low awareness, including Adebimpe et al. (2015), which described minimal awareness of Lassa fever (20%) and low knowledge that rats spread any disease (51%), and Ilesanmi et al. (2015), which identified low Lassa fever awareness among participants (17%). Another study, which compared knowledge of Lassa fever in a community experiencing a recent Lassa fever outbreak and a nearby unaffected university community in Ibadan, Nigeria, showed the outbreak community had much lower knowledge of Lassa fever prevention and transmission than the unaffected community, despite similar health care access (Awosanya, 2018).

Few studies have examined risk and vulnerability for Lassa fever through a behavioral lens. Usuwa et al. (2020) measured risk perception for Lassa fever in Ebonyi State Nigeria; in this study, the majority of participants perceived Lassa fever as severe (73%) and reported they had some degree of concern (76%). However, overall, a substantial proportion of the participants (41%) thought they had increased risk of contracting Lassa fever if they did not take preventive measures (Usuwa et al., 2020). A study among survivors of Lassa fever in Nigeria showed that consumption of food contaminated by rats' feces was the most prevalent perceived cause of their infection; nonetheless, some individuals attributed

Lassa fever to witchcraft and devils' work (Ilesanmi et al., 2015). Bonwitt et al. (2016), concluded that young boys in Nigeria who commonly hunted for and ate rodents were a high-risk group for Lassa fever. As the host for Lassa virus is a particular species of rat (*Mastomys natalensis*), the authors explored participant ability to identify different types of rats and showed that participants perceived that they were able to distinguish between bush rats and town rats, and the majority reported that they did not eat rats that were found in their towns. The researchers pointed out that the specific reservoir for Lassa virus was both a bush and town rat, and community members often confused it with other rat species which people usually ate, thereby potentially increasing their risk of Lassa fever (Bonwitt et al., 2016).

While rat consumption is commonly known as a high-risk activity for Lassa fever, few studies report open admissions from community members about eating this bushmeat, implying individuals may be publicly uncomfortable with this behavior even though they practice it. Indeed, the Bonwitt et al. (2016) study focused solely on rat consumption and described community members' reluctance and clearly apparent discomfort when discussing this behavior. Notably, the reluctance to discuss rodent consumption was limited to discussing eating town rats and shrews, and participants appeared more comfortable discussing bush rat consumption, which they perceived as a more acceptable community norm (Bonwitt et al., 2016).

Ilesanmi et al. (2021) identified risk factors for rats and Lassa fever in Nigeria, including the presence of bushes (62%) and rats (58%) around the house, the absence of rat-proof food storage mechanisms (28%), contact with individuals who had fever or died from unknown causes (17%), and food processing processes (11%). Other factors mentioned by the minority included consumption and handling of rat meat and spiritual causes (Ilesanmi et al., 2015). Conversely, Bonwitt et al. (2016) concluded consumption of rodents, including the species which is a reservoir for Lassa virus, was widespread in a sample from Sierra Leone and did not align with specific generations or gender (Bonwitt et al., 2016). Regarding behaviors that prevent Lassa fever, Usuwa et al.'s study (2020) described avoiding direct contact with rats (67%), stopping consumption of rats (71%), and avoiding contact with people who died of Lassa fever (77%) as primary measures, compared to those (37%) who believed that self-medicating their symptoms (37%) was an effective preventive measure (Usuwa et al., 2020).

Studies have described behaviors with potential to delay care-seeking for Lassa fever, which in turn increases mortality and community spread (Amri, 2022; Ilesanmi et al., 2015). Specifically, the authors explain that almost all individuals initially ascribed their symptoms to malaria or typhoid infection, usually self-treated their symptoms, and only sought care when symptoms were unresponsive to self-treatment. Amri (2022) also reported that many medical staff had neither specific training on the detection and treatment of Lassa fever nor the resources to quickly diagnose the illness onsite. Consequently, patients often only received an accurate diagnosis after they had progressed from a mild state to a severe stage of the disease, which was more challenging to treat (Amri, 2022).

Some studies have summarized household and community-based interventions for prevention of Lassa fever. Ilesanmi et al. (2015) described strategies reported for preventing Lassa fever, including the

frequent clearing of bushes and use of fumigation (57%), appropriate food storage and avoidance of meals prepared outside the home (22%), regular handwashing (12%), and changes to home environment or residence (9%). In Olalekan et al. (2014), participants mainly recommended proper refuse disposal (89.2%), storing grains and food items in covered containers (87.2%), and personal and environmental hygiene (both 86.8%).

Regarding trusted communication sources for Lassa fever-related information, Usuwa et al. (2020) reported that mass media, particularly radio, was the main source for disseminating information about Lassa fever.

The government of Sierra Leone has prioritized activities to both strengthen testing and surveillance activities and decrease, through use of community sensitization approaches, risk behaviors for zoonotic diseases among populations in endemic areas. The purpose of this study is to evaluate community members' and health workers' knowledge, perceptions, and attitudes related to Lassa fever and the factors influencing prevention behaviors, uptake of treatment and support services, and community engagement in prevention and programming. This research aims to provide high quality data to inform evidence-based risk communication and behavioral communication programming for Lassa fever in Sierra Leone through the Breakthrough ACTION Sierra Leone program. The goal of the research is to understand socio-behavioral factors and community norms that increase risk of acquiring Lassa fever and propose evidence-informed recommendations to promote behavior change to decrease risk and illness.

## Study Aims and Objectives

The study explored community members' perceptions, knowledge, and behaviors associated with rodents in general and rats that carry Lassa fever specifically. Specific research objectives included describing and understanding the following:

1. The context of Lassa fever in affected communities.
2. Individual and community norms and behaviors that increase risk and vulnerability for Lassa fever.
3. Personal experiences with rats during daily living and with Lassa fever sickness.
4. The level of knowledge and awareness of Lassa fever among community members.
5. Knowledge of what to do if one suspects that they have or someone else has Lassa fever.
6. Knowledge of ways to prevent Lassa fever among community members.
7. Individual perceptions of behavioral and other drivers of Lassa fever.

The study results also support the following:

8. Developing credible sources of information about risk and transmission of the Lassa fever.
9. Generating findings to serve as a reference point for One Health sectors including the Ministry of Health and Sanitation (MOHS), Environmental Protection Agency, the Ministry of Agriculture



and Forestry, and other health agencies working to strengthen sensitization to Lassa fever in the country.

10. Mitigating potential rumors and misinformation about Lassa fever.

11. Identifying credible sources and/or developing credible materials to promote behavior change.

This report summarizes key findings on the social and behavioral drivers of Lassa fever in Kenema and Tonkolili districts of Sierra Leone.

# Methods

## Study Design

The study used qualitative methods to collect information on knowledge, perceptions, and behaviors related to Lassa fever. The study population included adult men and women 18 years of age and older living in Tonkolili and Kenema districts of Sierra Leone. Health care workers (HCWs) at the Lassa fever ward of KGH, who assess and care for patients with Lassa fever, were also included in the sample.

## Study Sites

Researchers conducted the study in Kenema and Tonkolili districts in Sierra Leone. Kenema District has the highest incidence of Lassa fever in Sierra Leone, having reported cases of Lassa fever each recent year (WHO, 2019; Shaffer et al., 2014). From 2016–2020, Sierra Leone experienced gradually declining trends in annual Lassa fever case totals; however, in 2021, cases doubled compared to 2020 (from eight total reported in 2020 to 16 total in 2021) (Koua, 2022). In addition, Kenema District hosts the only Lassa fever ward in the country, so researchers chose it based on its unique access to, knowledge of, and experience with Lassa fever patients and health workers trained to provide services for Lassa fever. Tonkolili District is an area not previously known for recording Lassa fever cases, but in recent years, it has documented increased cases, with the latest occurrences being in March 2022 (after this study), February 2022 and 2021, and more extensively in October 2019 (Koua, 2022). The district also borders two high incidence districts of Bo and Kenema. Tonkolili is geographically, economically, and culturally different from Kenema and Bo Districts and provides the opportunity to better understand how differences in context and cultural norms may influence the sociobehavioral aspects for risk of Lassa fever to better tailor behavior change interventions through campaigns and other types of programming. DHMT staff from Tonkolili and Kenema, HCWs from the Lassa fever ward at KGH, and Breakthrough ACTION in-country program staff collaborated to identify the specific communities included in the study.

## Sample Size and Sampling

Interviewers conducted a total of 45 in-depth interviews (IDIs) in both districts, 15 of which were from Tonkolili and 30 were from Kenema District. Interviews with community members comprised all 15 IDIs in Tonkolili. In Kenema, interviewers surveyed 15 community members. The other 15 IDIs were conducted with health workers from KGH who provided care on the Lassa fever ward.

## Study Participants

Participants in this study were adult (18 years of age and older) community members and HCWs who worked specifically at the KGH Lassa fever ward. Community leaders, HCWs, and program staff working in the selected communities recommended community member participants. These community

members included individuals with or without a history of having Lassa fever, farmers, hunters, traders, community leaders, staff of community-based organizations, and some community- and facility-based health workers serving the selected communities. Community leaders and DHMT staff working in the selected communities recommended additional HCW participants from the KGH Lassa fever ward. These individuals may have knowledge of Lassa fever risk behaviors and experiences based on their contact with, and assessments of, Lassa fever patients treated at the hospital.

Participants met the following criteria:

### Inclusion Criteria

1. Is at least 18 years old at the time of the data collection.
2. Has lived in selected community for at least one year.
3. Provides voluntary informed consent.
4. Understands and speaks English and/or Temne or Mende.
5. Consents to and passes COVID-19 screening prior to interview.
6. Agrees to wash hands, stay at two meters' distance, and use a mask during the interview.

### Exclusion Criteria

1. Exhibits respiratory symptoms, is sick, or does not pass COVID-19 screening.
2. Is unwilling to adhere to COVID-19 precautions prior to and during the interview.
3. Is not available for an interview during the period for data collection.

### Research Team

The research team consisted of CCP research staff, who were part of the USAID-funded Breakthrough ACTION project, and a local contractor who conducted field work with a team of local data collectors, field supervisors, and support staff with experience and knowledge of the local culture and languages of the districts. CCP research staff trained the team on the study purpose and methods, including sampling, recruitment, tools, field work, quality assurance, interviewing techniques, and database development and management. Training content included information on research ethics in the field, rights of human subjects during research, obtaining informed consent, and implementing safety precautions for COVID-19 during community entry and field work.

The training provided opportunities to practice the content taught using the study methods, forms, and tools in both English and local languages. The local project manager, research leads, and field team coordinator received additional training on the protocol, supervision, quality assurance, communication, and reporting requirements for the study.

## Data Collection Tools

A qualitative discussion guide helped facilitate and guide the IDIs. IDI discussions focused on both Lassa fever and the perceived normative and behavioral factors, both individual and community-based, influencing risk of infection. Specific questions included knowledge of the cause and transmission of Lassa fever; risk groups and behaviors; cultural norms, behaviors, and practices that influence risk; prevention behaviors; reporting of illness; experiences with Lassa fever; needed health promotion messages; and trusted sources of information.

Interviewees remained anonymous in the data collection process; and no personal identifiers were included in the notes taken or in the electronic database. Participants were assigned unique study identification numbers which were used on the data collection forms.

## Data Management

Notetakers collected data on paper forms during the IDIs. After each IDI, they shared and discussed their notes on the dialogues with one another and validated and consolidated the responses for each question in the tool. The research team developed a final transcript of the discussion and findings from the notes. Each finalized consolidated transcript was uploaded to an electronic tool with capabilities to collate the data into a database of cases for analysis. The team analyzed data using content analysis and manual thematic coding.

## Permissions and Ethics

The study protocol was reviewed and approved by the Sierra Leone Ethics and Scientific Review Committee at the Sierra Leone MOHS and the Johns Hopkins Bloomberg School of Public Health Institutional Review Board in Baltimore, Maryland, United States.

The research team obtained permissions from the Chief Medical Officer at the MOHS. Approval letters were presented to each District Medical Officer and DHMT, local councils, chiefdom heads, and community leaders. The team explained the study, answered questions, and introduced themselves to leaders.

## Results

The results yielded meaningful and actionable information about Lassa fever in communities. A description of the sample and major themes from the IDIs are detailed in this section.

<b>TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE</b>			
DEMOGRAPHIC CHARACTERISTIC		SAMPLE SIZE AND PROPORTION WITH CHARACTERISTIC	
		N	(%)
Sex	Male	25.0	0.56
	Female	20.0	0.44
Location	Urban	5.0	0.11
	Rural	40.0	0.89
District	Tonkolili	15.0	0.33
	Kenema	30.0	0.66
Religion	Christian	21.0	0.47
	Muslim	24.0	0.53
Ethnicity	Mende	26.0	0.58
	Temne	7.0	0.16
	Susu	1.0	0.02
	Kuranko	1.0	0.02
	Limba	9.0	0.20
Highest education level attained	University	16.0	0.36
	Primary school	5.0	0.11
	Secondary school	13.0	0.29
	Vocational	7.0	0.16
	No schooling	4.0	0.09
Occupation	Health care worker	20.0	0.44
	Agriculture	18.0	0.40
	Trade	2.0	0.04
	Not working	1.0	0.02
	Civil servant	3.0	0.07
	Office worker	1.0	0.02
Type of Informant	Health care worker	23.0	0.51
	Community member	22.0	0.49
History of Lassa fever	Yes	9.0	0.20
	No	36.0	0.80

## Description of the Sample

Table 1 describes the sample by demographics. In total, data collectors conducted 45 IDIs, 15 of which were from Tonkolili and 30 were from Kenema District. The sample from Kenema District included 15 health workers from the KGH Lassa fever ward. The majority of participants were from rural areas (89%) and had not had a previous Lassa fever infection (80%). Participants from Kenema District resided in the following communities Konia, Panguma, Masanga, Yumbuma, Kenema Rural and Urban, Pujehun, Dawabu, Talia, Bendu Junction, Kamboma, Dia, Mano Ngieya, Tonga, Bendu Mamima, Foindu, Hangha, and in Tonkolili they resided in Wumia, Bumbuna, Sasakala, Makonthadae, and Mayoror.

Slightly more than one-half of participants were male (56%), Muslim (53%), and of the Mende ethnic group (58%). Just over one-third of participants had a university education (36%) and were either involved in farming (40%) or health care (44%) in some capacity.

## Community Context

Responses indicated that the majority of individuals in the Kenema study area were from the Mende ethnic group and included smaller minorities like Mandingo and Fulla, while participants from the Tonkolili study area described their towns' composition as mostly Temne but also including Mandingo, Fullah, Susu, or other groups. Participants described living in housing made of mudbrick and thatch, with open compounds. Generally, a few houses, mostly those in urban areas, are made of cement and zinc sheets. Participants stated that many in the community lived in crowded conditions in their homes, with little separation between houses in the communities. Participants generally perceived homes and compounds were clean but thought many homes in the communities were not kept clean or were untidy because of a general lack of storage space. As a result, many families lived in close quarters with their animals.

*“Some of the things you will see in every home in this community are foodstuffs, broken beds, pots, pans, and farm tools. Foodstuff is just scattered about in parlors and bedrooms. You can't differentiate between stores and parlors. Food and cooking utensils are all packed in one parlor.”– Male, Rural, Tonkolili*

*“Most often you would see crowded homes packed with foodstuffs such as rice, cassava, potatoes, and yams, all together in one house. Sheep and goats are living in the same house with people. Everything is in one household/compound.”– Female, Rural, Tonkolili*

On the other extreme, a few participants in mainly urban areas described homes in their community as having more space and greater amenities such as a roomed kitchen, toilet, plumbing, plasma television, satellite dish, chairs, tables, and swimming pools.

*“Here in this community, you can see a lot of things because the community is too big; you can see things like sand, stone, cement bricks, mud bricks ...*

*You can see many things like the kitchen, toilet, plasma television, chairs, table, swimming pools, and many more.”– Female, Urban, Kenema*

Common illnesses experienced by community members included those related to environmental sanitation and personal hygiene, including typhoid and diarrhea, and other diseases such as malaria, tuberculosis, hypertension, respiratory ailments, COVID-19, and, on occasion, Lassa fever. Participants also reported ailments such as diabetes, hernia, hepatitis, and trauma from motorbike accidents.

Most rural-based participants engaged in agriculture or mining; however, the general sentiment was self-employed mining endeavors were now expensive, so most individuals were switching from gold and diamond mining to agriculture. Communities usually kept animals including goats, chickens, ducks, sheep, dogs, and cats, with animal husbandry involving goats, sheep, and chickens. Farmers grew common subsistence crops, including rice, potatoes, yam, corn, cassava, banana, groundnut, and palm, and some also produced coffee and cocoa.

*“Most of the people in this community are poor and rely on farming as their main source of livelihood. Some are miners [and] okada [i.e., motorbike] riders, and we have those who are petty traders. Rice farming is the major crop for people in this community. We have few who have cash crops farms like cocoa and coffee, and we have those who rear animals.”– Female, Rural, Kenema*

Participants from urban communities engaged in a variety of professional and technical work rather than farming.

*“The people in this community have different types of work to earn their living. This community is very big. We have big government offices like banks, hospitals. We also have a large number of schools in this community, which means we have a lot of teachers, traders, NGO [i.e., nongovernmental organization] workers, and other organizations. So, people don’t depend on farming here.”– Female, Urban, Kenema*

Most community members’ farms were located near their households or within walking distance.

*“Most of the farms in this community are not too far away. You can stand in this community and see some of the farms. We have some farms that are two miles away or three miles, but the majority are very close to the community.”– Female, Rural, Kenema*

Participants stated that having “no permanent place to store our crops” was a persistent problem for farmers, and many farmers stored their harvest on their farms. However, fear of theft was common and guided individual decisions about where to store harvests. Consequently, the majority of farmers stored their harvest in their home, usually in living spaces, in cupboards, or in *banda* (a smokehouse for drying fish); however, a few mentioned using private storage facilities.

*“Most of them farm around the community in nearby swamp or bushes just 500 meters away from their houses. There is no defined storage system for their crops, so most people store their crop in the house.”– Female, Rural, Tonkolili*

## Perceptions About Rats in the Community

Participants identified rats as common in the community. Some characterized them as a nuisance and a health hazard, while others saw them as a source of food. Participants described rats as “dangerous to health,” “a big problem,” “destructive,” and the cause of “bitter experiences” and “illness.” One participant summed the scale of the problem as: “There is no house in this community that does not have a rat. It’s just the same as bed bugs, which are present in every house in this community.”

### Common in Communities

Participants described rats as usually nocturnal feeders, but they were more visible during the rainy season and at harvest time. Others perceived that rats were visible and active at all times, during the day and the night, irrespective of the season. While some participants associated rats with garbage, dirty areas, rural areas, and poor hygiene and sanitation, others perceived that they were a more widespread problem that affected everyone.

*“But I think rats can be seen at any time, be it in the rainy season, dry season, day or night, morning or evening. It depends on what they want or the kind of environment you are living in. If the environment is not clean and there is no environmental sanitation, you will see rats anytime of the day, irrespective of the season.”– Male, Urban, Kenema*

*“Rats are very common in this community, most importantly during the rainy season. The rats will move from the bush and swamp and come into the community; most of them will go back to the swamp after having enough food to eat, because that [is the] time the people may have started harvesting their crops.”– Male, Rural, Kenema*

*“I do see rats in my house at night almost every day. I can see them everywhere in my house, especially where we keep our food.”– Male, Rural, Tonkolili*

Participants perceived that rats entered their community in search of food and then returned to other places after eating. They described seeing rats in the corners of their homes, ceilings, roofs, indoor kitchens, in cupboards, and areas of the home where food is stored. Others mentioned seeing rats in drainage gutters, marketplaces, the shrubbery around homes, and on farms. Participants from communities in Tonkolili also mentioned that rats were present in community buildings, including schools, churches, mosques, community centers, and court barrays (i.e., public fora).

### Destructive



The overwhelming sentiment was that rats were destructive; they not only consumed the livelihood of community members but also destroyed property by digging holes in homes and chewing possessions such as clothes, books, and mattresses.

*“Rats are the biggest problem for us in this community. They eat our farm products like groundnut [and] corn and even destroy our clothes. Quite recently, rats destroyed the gallon [vessel] that contained palm oil in a way that I was no longer able to consume the palm oil, because they left feces in and around it. They can also eat our prepared food if it is not well covered.”– Female, Rural, Kenema*

In addition, many participants perceived that rats provided no benefits to the community, only detriments. They mentioned that having rats in homes may influence other public health risks, such as an increased presence of snakes that feed on rodents in homes and the general area.

*“I will be very pleased to listen to anyone that will explain to me the benefit of rats. As to my own understanding, there is no benefit of having rats other than destruction.”– Male, Rural, Tonkolili*

*“There is no potential benefit of having rats in homes. What rats did to my bread was frustrating and killing them will not bring back my bread. I had to suffer that particular day. For farmers, they destroy their rice and other crops; there is no benefit you can derive. People usually say, ‘When you keep rodents, especially rats, you will invite snakes into homes because snakes love eating rodents.’”– Male, Rural, Kenema*

*“Rats have no good use or benefits to human beings. I got sick of Lassa fever which is caused by rats. Rats have destroyed a lot of household properties that cost millions of Leones. A lot of people have died of Lassa all in the name of coming in contact with rats either directly or indirectly.”– Male, Rural, Kenema*

Conversely, one participant farmer mentioned that farmers did not consider rats to be bothersome, reasoning that their behaviors were for their survival, so trying to get rid of them was futile.

*“I will say rats are not a problem to us at all. We meet them in the bush, we do our farming activities and take our crops to the town, and they also need to survive. The only option they have is to follow us to town and get their own share of the harvest. Even if you kill all the rats in the community today you will see more in a week's time.”– Male, Rural, Kenema*

## A Source of Food

Participants described rat meat as part of the diet of some community members and a necessary source of protein during the rainy season when food was sometimes scarce. Some described eating rats was described as a community norm. Many participant farmers mentioned they frequently ate the rats that they killed on their farms. Responses noted very young boys hunt and eat rat meat, and they are a

subgroup who may not have access to information about the risk associated with the practice. Nonetheless, few participants felt comfortable admitting that they personally consumed rat meat, and many attributed the practice to others rather than themselves. Participants from Tonkolili appeared more comfortable discussing consumption of rat meat, and some considered it a delicacy.

*“If they do not have money to buy fish or meat in the market, and there are rats available, they will eat it, though it is not frequent.”– Female, Rural, Kenema*

*“During the day we see them in the (bush), and often when we are brushing our swamp land, we catch and eat them. Bush rats are so sweet.”– Female, Rural, Tonkolili*

*“Our children, most especially the boys at the age of ten that are going to school, hunt them to eat.”– Male, Rural, Kenema*

Eating rats was linked to rural areas and perceived to be a seasonal practice by a many participants. Participants suggested that during the rains when food is scarce, consumption of rat meat increases as it supplements the diet of many village residents.

*“The other category of people that are at risk of getting in contact with rats are in the villages. During the rainy season, it serves as a major source of protein for them. A practice most people are also involved in, but they will not admit.”– Male, Rural, Kenema*

A few participants stated that since the community had identified cases of Lassa fever, and HCWs then provided the community with education and information, the overall incidence of rat consumption had decreased.

*“Rat is one animal that we do eat in this community, but because of Lassa fever found in rats, we no longer eat rats, and we have started using rat poison to kill them.”– Male, Rural, Tonkolili*

*“There are some rats that are dangerous and harmful to be around us, and there are some we were eating, but we are not eating them anymore because the health workers said we should stop eating rats, as it is not good for us to eat. And the community members have changed that habit of eating them.”– Male, Rural, Tonkolili*

### Bush and House Rats are Different

Regarding consumption of rat meat, community members distinguished between rats found in the home and rats that stayed in the bush. Some perceived bush rats to be safe to eat, while rats living within their homes and the town were usually considered dangerous.

*“They don’t consider rats a bad thing. They hunt them in swamps and eat them. When they are brushing their farms, they kill them and eat them. They said those rats in their*

*houses are the most dangerous ones. But rodents in the swamps are good for food.”– Male, Rural, Tonkolili*

*“They thought of rats as food. They eat them, especially those found in the swamps. But those found in homes are not eaten.”– Female, Rural, Tonkolili*

## Risk and Vulnerability

Participants responded to questions about their risk of encounters with rats and perceived susceptibility to illness. They also identified specific behaviors and activities in households and the community that they believed increased the presence of rats in their community, including clearing bushes for planting, harvesting, storing crops in the home, and having poor sanitation overall, especially in the kitchen.

### Perceived Risk

Overall, many participants perceived that rats were a threat to their health. Personal experiences with Lassa fever heightened community members’ perception of risk and vulnerability.

*“We consider rats as a threat, as almost all my family have fallen sick of Lassa fever, but the good thing is that we only lost two of the family members out of the nine that are Lassa positive. For some families, they will all die, but we are saying thanks and praise to Allah for his mercy on us.”– Male, Rural, Kenema*

*“People in this community, especially some of us who have suffered from a rat-related sickness called Lassa fever, think of rats as a problem.”– Male, Rural, Kenema*

Nonetheless, some participants believed there was complacency regarding rats among some community members depending on whether they had experienced illness from rats or not. For these individuals, perceived risk is low because they encounter rats frequently on a daily basis, but they have remained well. A few community members do not believe that rats cause Lassa fever. Furthermore, some individuals may have become accustomed to the continuous presence of rats in their communities, so now have little reaction to seeing rats in their environment.

*“There is a mixed feeling each time people see rats close to their houses or within the community. For those who have survived Lassa or have lost their loved ones, they will see rats as threats. But for some they don’t see it as a problem; that is why they don’t clean their homes and keep their crops in their homes. They see rats in the morning and in the evening.”– Female, Rural, Kenema*

*“Most people do not believe that rats have Lassa fever, as seeing rats in or close to the community is common to everyone here; people are only bothered by the destruction caused to their foodstuffs.”– Male, Rural, Tonkolili*

*“I haven’t personally considered them to be a problem because they haven’t done me any major wrong that I will not forgive them. The only thing they will do to you is to eat out your food if you are careless, and that is not considered as a problem; rather, it is your fault because you leave your food open.”— Male, Rural, Kenema*

Health workers described conducting outreach activities in communities to prevent Lassa fever and discussions with community members regarding risk associated with eating rat meat. Their general sentiment held that convincing community members about the risk of Lassa fever was difficult when they could not show community members the kind of rat that carries the Lassa virus. Some health workers also believed that some community members wanted to identify the particular reservoir rat so they could continue to eat rats with a sense of safety.

*“They know Lassa is real, but for them to stop eating, I am not convinced, because sometimes when you are talking, they actually want to see the specific rat that is responsible for Lassa fever. Maybe they just want to figure it out and then start eating their rats as usual.”— Male, Urban, Kenema*

### Perceived Severity

Overall, participants perceived that Lassa fever was taken seriously by community members, especially those who have previously experienced it. Informants said their communities perceived Lassa fever to be severe because of its high mortality rate and infectiousness.

*“Community members consider this sickness to be a very serious issue because it kills their loved ones, family, and community members also. They consider it seriously, as the sickness is easily and quickly transferable, very much deadly, and chances of survival are very small.”— Female, Rural, Tonkolili*

Some community members however did not perceive Lassa fever as severe, given how few cases they had seen in their community and the relative prevalence of other diseases like typhoid and malaria. The participants that didn’t perceive the severity of Lassa fever mainly resided in communities with few recent Lassa fever cases and where consumption of rat meat occurred occasionally. Many HCWs also spoke of a low perceived severity of Lassa fever in Kenema city specifically, as residents did not experience cases of Lassa fever as often as other communities.

*“Lassa fever is not considered a serious threat to the community compared to malaria and typhoid. As I was saying, we don’t have a Lassa fever patient in this community, but we have a lot of malaria and typhoid patients in this community.”— Male, Rural, Kenema*

*“As I said, in this community—Kenema is a community—people don’t actually consider Lassa as a serious problem.”— Female, Urban, Kenema*

*“Seeing rats in this community—I don’t think it is really a problem to people, though I am working at the Lassa department, and the main causes of Lassa fever is rats. But to be honest with you, people who live in this area do not see rats to pose a very big threat even though there are medical people out there doing campaigns with radio jingles.”— Male, Urban, Kenema*

## Risk Groups

Participants generally felt that almost everyone in the community frequently encountered rats at some point; however, individuals in the community perceived to have increased risk included young boys who hunt rats for food and to sell, farmers who kill and eat them on their farms, and “careless” individuals, meaning people who did not clean their homes.

*“Everyone in the community is at risk of coming into contact with rats. If there are rats in the hospital, what will you expect for those in the community?”— Male, Rural, Kenema*

*“I will describe people that usually come in contact with rats as careless people. My reason for saying that is because if you do not clean your home or community, you will always see them around your place.”— Male, Rural, Kenema*

Participants unanimously identified farmers as a group with increased risk for Lassa fever, because they encountered rats on their farms and also brought their harvest into their homes. Another group interviewees commonly mentioned was youth; youth were more likely to work on farms compared to older people and commonly participated in activities like hunting or traveling through the bush, which increased their exposure to rats.

*“Farmers are fond of coming into contact with rats. During the brushing period, they would catch most of these rats in the swamps which they were brushing. Also, school children are fond of rats as they catch them to eat. They went into the bushes to hunt and kill them to eat as meat.”— Male, Rural, Tonkolili*

By and large, participants who were farmers believed coming into contact with rats was unavoidable, because rat encounters are intricately tied to their occupation and livelihood. In addition, when farmers catch rats while farming, the entire family may also have contact with the animal, as women and children are usually the ones to prepare the rat, presumably for a meal.

*“My brother [and I], we are farmers, and there is no way I can stop having contact with rats. Presently we are brushing our swamps; we catch and eat rats. This is the fact, but most people will not say it for reasons best known to them. If I catch a rat while working in the swamp, my wife and children must come in contact with that rat because they will be the one to process it. To come in contact with rats has nothing to*

*do with age [or] sex, but [rather] the activities we are involved in, which is farming.”– Male, Rural, Kenema*

Hunters, and especially young boys who hunt rats to eat and to sell, were identified as a risk group for contact with rats. This was described by participants from both districts but more often by those residing in rural areas.

*“The usual activities that increase the chances of our people coming in contact with rats are farming and hunting of rats for food.”– Male, Rural, Kenema*

*“They are mostly little boys who hunt them. Even adults hunt them in their farm. When they are brushing their farm, they kill rats and eat them, little boys would go hunting and rats are not spared.”– Male, Rural, Tonkolili*

*“The people that usually come in contact with rats are mostly boys between the ages of 13 to 17 years. They are mostly school children. Occasionally, youths, when they are brushing their swamps and they come in contact with rats, they would kill them and eat them. They [youths] usually hunt bush meat, including rats for [sustenance], either by eating or selling them to earn some money.”– Female, Rural, Tonkolili*

### Risk Factors for Having Rats

Participants identified several different risk factors they perceived as increasing a person's likelihood of coming into contact with rats. These risks were mainly structural in nature and included proximity between a farm and the house, food storage options, community sanitation, and personal household sanitation.

#### Proximity of farms

The location of farms was identified as a risk factor for rats. While some farms were several miles from communities, the majority were in swamps surrounding communities or within sight of other homes. In both districts, participants associated close proximity of farms to homes with the presence of rats in houses.

*“Most of them farm around the community in nearby swamp or bushes just 500 meters away from their houses.”– Male, Urban, Tonkolili*

*“The farms are very close to the village. That’s why most often rats are seen in houses after the harvest.”– Female, Rural, Tonkolili*

*“Most of the farms in this community are not too far away. You can stand in this community and see some of the farms. We have some farms that are two miles away or three miles, but the majority are very close to the community.”– Female, Rural, Kenema*

Participants believed that rats, searching for food, follow farm produce as farmers move their harvest from field to homes.

*“Rats destroy our crops in our farms, and when food has been harvested and transported in our homes, the rats [follow] the crops in[to] our homes.”– Female, Rural, Tonkolili*

#### Food Storage

Participants described lack of appropriate and safe food storage options as a “very big problem” in communities; they perceived this to be the primary reason for the presence of rats in the home. In the past, most farmers stored their harvest on the farm or in the bush; however, many, if not all, participants stated that farm produce and other foodstuffs were currently stored in the home to keep it safe from thieves. Participants stated that community storage spaces were limited, with some community stores being unsecure. Thus, most individuals stored their produce in their living spaces, in wooden crates in or outside their homes, or on or in the eaves of their roofs.

*“The activities that increase the presence of rats in the community is farming activity. During the harvesting, people store their products in their various houses.”– Female, Rural, Kenema*

*“Before this time, we had special places in the community where we kept our rice and groundnuts after harvest, which was outside the home. But this stopped when thieves started coming into the community to steal our harvest whilst we were asleep. Correctly, we now store our crops in the home so that the thieves will not take it away.”– Male, Rural, Kenema*

*“Take a look at the community store. Do you think that is enough to store all our food? No. We don’t have private stores to store our food. What we do is to either look for a room at the house if you have enough rooms. If not, you can store your food in the parlor. We only have a store for cocoa, but for rice, groundnut, corn, and other crops, we store them at home so that people can’t do away with them.”– Male, Rural, Kenema*

#### Garbage Sites

Participants indicated that the lack of appropriate facilities for disposal of waste and unfenced garbage sites contributed to the presence of rats in their community.

*“If you can go around this community, you will realize that almost every household or home have their dumping site. We don’t have a single dumping site for the community that is fenced, so at night rats and other rodents will come around to feed on the leftovers that were disposed of in the various dumping sites.”– Female, Rural, Kenema*

Some community members also perceived garbage sites as places that weren't cleaned or managed often in communities, further increasing the incidence of rats.

*"There are people who are supposed to be cleaning strategic areas in the community and get paid at the end of the day. But they concentrate more on the main road that leads to the community and the central market and leave out the dump site. That is why you sometimes see garbage littered all over the community which attracts rats."*— Male, Rural, Kenema

*"The community dumping site is a hiding place for all rats in this community. Rats will only move from the dump site into the community or home during the rainy season because the dumping site will get wet."*— Male, Rural, Kenema

Conversely, participants who resided in more developed urban areas reported that they did not frequently see rats because they have well-built homes with good drainage and sanitation systems and fenced garbage collection sites.

*"Sometimes you can see rats, but they are not too common in this part because we don't have a lot of drainage [areas], and we don't have dust bins around, and we don't have congested places like garbage or other areas where rats can take leisure living. Like I said, we [are] still at the heart of the community, [so] almost all the houses are of standard [where] you cannot see rats; they are very few."*— Male, Urban, Kenema

#### Poor Sanitation

Lastly, participants from both study sites overwhelmingly believed that rats were associated with dirty, cluttered homes and poor sanitation practices, including inappropriate disposal of personal and household waste. Participants also believed community members often did not take responsibility for cleaning their environment and relied on government workers to do so for them.

*"I know it is lack of proper cleaning that will lead rats into your home or house, no matter your location or your age. Once you don't clean your home, you [should] frequently expect rats in your house. It is not by activity, but cleanliness is the key."*— Male, Rural, Kenema

*"Here it is just poor environmental sanitation, people depend on the government to do everything in the community, so they don't clean their environment."*— Female, Rural, Kenema

*"Like I said, lack of environmental cleaning causes rats in the community. Leaving your disposal, widely open toilet, dirty kitchen, all these things cause the presence of rats."*— Female, Urban, Kenema

## Personal Experiences with Rats and Lassa Fever



While experience with Lassa fever was uncommon, and HCWs were more likely to encounter the illness since they cared for the sick, many community members described interacting with rats often, especially during the harvest season.

### Encounters with Rats

Personal encounters with rats in the home were common in the daily lives of community members, and many of them described very recent encounters. They reported that they “see rats every day,” or “contact them every day” in their homes. The quotation which follows illustrates how family members (in this case, children) may incur additional risks through actions taken to kill rats.

*“[A] few days ago, I came in contact with a rat in one of my boxes when I opened it and it jumped [out], but my kids were around, and they killed it.”– Female, Rural, Kenema*

However, those who felt they kept clean homes or had cats in their houses reported that they had few encounters with rats.

Participants described how the prevalence of rats in the community increased with the rains and harvest season when they moved from the swamps into homes. Individual reactions to rat encounters varied from chasing them, beating them to death, or using poison to kill them.

*“Rats are so common and found everywhere in people’s homes and even in my house. In general, rats are so many, and I even killed one with my hand unknowingly. It was in my dirty clothes and when I squeezed the clothes in a bucket to be laundered it got suffocated and died.”– Male, Rural, Tonkolili*

*“I can see rats most of the time in my house and I have tried to get rid of them, but they are still coming in the house, and they have been coming from the nearby bush. They do come at night and disappear during the daytime. They normally pass through the roof and the door. I have been using all kinds of rat poison, but it seems to be fruitless.”– Male, Rural, Tonkolili*

While rats were characterized as a household problem, most participants encountered rats outside their homes and in the general community, including in marketplaces, fisheries, food vendor stalls and restaurants, and public buildings.

*“The most common area [where] you can find rats are marketplaces. Let me share this with you. There was a time when I went to a marketplace to buy some stuff. I happened to see [a rat] under the table of the vendor. They do go to the marketplaces in search of food.”– Female, Urban, Kenema*

Per some participants, rats also appear in some cleaner areas with good sanitation, such as clinics. A health worker from Kenema recounted the following experience in the hospital that suggests the risk of encounters with rats might be more widespread.

*“The last time I was working late at the hospital. It was during the holy month of Ramadan. I bought a loaf of bread to eat in the morning; I placed it in one of our cupboards and forgot to close the cupboard. After attending to the patient, I decided to take the bread and keep it in a safer place, then I realized that a rat had almost finished eating the bread.”– Male, Rural, Kenema*

## Experiences with Lassa Fever

Some participants had recovered from Lassa fever or had family members who either succumbed to or recovered from Lassa fever. Common symptoms experienced included fever, headache, and body pains. Most participants who had a history of Lassa fever linked it to exposure to rats but could not identify a specific behavior that led to the infection.

*“When I got sick, I was treated for malaria, but still my sickness couldn’t stop. I was still experiencing high fever, headache, back pain, and sore throat, then I was rushed to the hospital where the doctors found out that I had Lassa fever after a series of tests.”– Male, Rural, Kenema*

Some participants made observable effort to avoid stating that Lassa fever was acquired through eating rats. While some community members had become sick from eating rats, they said the illness they had acquired after eating rats was not Lassa fever. Overall, they believed the prevalence of Lassa fever was very low. Nonetheless, the community response to suspected or diagnosed Lassa fever in the community varied and included panic, fear, and sadness. Participants stated that whenever a case was diagnosed in the community, panic spread and, to some extent, people were afraid of individuals at the point of infection, indicating a need for more education and effective community response mechanisms.

*“When there is a suspected case, the whole community will be in a panic mood, because they thought everybody would be arrested and tested. Some would even run to their farms for safety.”– Male, Rural, Kenema*

*“Each time someone is sick of Lassa, it will send the whole community into shock.”– Male, Rural, Kenema*

Other reactions among community members included sadness stemming from knowledge of the low recovery rate among Lassa fever patients, but they expressed joy for and acceptance of those who recovered and returned home.

*“People will start to cry because the majority of the people who contact Lassa do not survive, so if you are fortunate to get Lassa and you recover, the people will welcome you with open hands. They will not disassociate themselves from you, neither [will they] try to discriminate against you or your family.”– Male, Rural, Kenema*

While people responded to active Lassa fever cases with fear and uncertainty, community stigma towards Lassa fever survivors did not appear to be the norm. Only one respondent felt that those who

survived Lassa fever still had, and could spread, it; otherwise participants did not mention stigma and instead reported community acceptance of survivors.

*“The people in this chiefdom are aware of the presence of Lassa. This made it simple for those who have survived Lassa fever to come back and be part of the community without people pointing fingers at them. They interact very well with those of us who have survived Lassa.”— Male, Rural, Kenema*

Some study participants directly experienced Lassa fever, and all had very similar experiences to the Lassa fever cases described by HCWs. Typically, they had a fever for a few days, and many assumed the cause was malaria, so they tried to self-medicate at home. When the fever did not get better, they sought a malaria test from a health facility and were eventually taken to a larger hospital when their symptoms did not improve. Participants who survived Lassa fever reported that they spend more effort maintaining a clean home environment, including using rat poison and keeping their food covered.

*“Initially I did self-medicate for about three days, as I thought it was malaria as usual. I started taking malaria drugs, but it couldn’t work. The fever was so heavy that I sometimes doubled up on three different kinds of coats to feel warm, which also couldn’t work. I took the bold step to approach the health care workers and explained my situation to them. They immediately isolated me and took my blood sample to Kenema for a test, and the result came out to be Lassa positive. My family was quarantined and before I got to know what was happening, I had already infected my wife and one of my relatives, as they were very close to me when I got infected. It was easier for them because their illness was not manifested as it happened to me.”— Male, Rural, Kenema*

Participants described how those who recover from Lassa fever suffer negative long-term consequences to their health, including sensory changes, and they lack the systemic support to manage these consequences and cope with long-term changes to their lives.

*“It has caused a lot of health issues to people. Some are almost deaf, and others are blind. Those people are suffering because they are not getting support and are not healthy after they survived Lassa fever.”— Male, Rural, Kenema*

A few participants who had recovered from Lassa described psychosocial effects such as feelings of anxiety whenever they encountered rats in the community, as this brought back painful memories of their past illness.

*“Each time I see them, I feel horrible, and it reminds me of the time I was admitted at the Lassa hospital.”— Male, Rural, Kenema*

*“During the time I was admitted, I lost hope at that time because I was weeping and at the same time having [diarrhea]. I don’t want to recall that moment again.”– Male, Rural, Kenema*

## Awareness and Knowledge

All HCWs and almost all community members confirmed that they had heard about Lassa fever, but the level of correct knowledge of causes, symptoms, and transmission of Lassa fever varied among community members.

### Knowledge of Causes of Lassa Fever

Participants had varying perceptions about the cause of Lassa fever. Many attributed it to rats and some even mentioned person-to-person transmission; however some believed it occurred naturally, it came from God, or the disease resulted from poor environmental sanitation. Some communities denied existence of Lassa fever.

*“As I was saying, there are mixed feelings and thoughts. For some they believe that rats cause Lassa, and, for others, they believe it is natural, and it comes from God, even though they are seeing people getting sick of Lassa, and they die at the end. The other cause of Lassa they think are poor hygiene, as rats are happy with a dirty environment.”– Female, Rural, Kenema*

*“[Rats] are so dangerous to our health. They are the primary cause of Lassa fever. The rat is a destructive animal. It destroys lives and property, and it is very dangerous for any community because it causes Lassa fever which leads to death if not treated early.”– Female, Rural, Tonkolili*

*“Rats are very much dangerous to us. But the most fatal and dangerous aspect of rats is that they cause Lassa fever. This may happen as a result of either eating affected rats or eating food that has been contaminated by infected rats.”– Female, Rural, Kenema*

While participants could describe a link between rats and Lassa fever, the link was mainly that rats often contaminated their food and water. Only a couple of participants mentioned the role of rat waste (urine/feces) in direct transmission of Lassa fever. Participants indicated that the mode of transmission was primarily contaminated food and water and eating rats.

*“Rats have the sickness called Lassa fever in their body, feces, saliva, and urine, and if you are near them, you would have the Lassa fever. Coming into contact with any of its fluid or feces can cause Lassa fever.”– Female, Rural, Tonkolili*

In general, many participants believed simply coming in contact with any rat was sufficient to give you Lassa fever.

*“Yes, it is considered as a problem because whenever rats touch your food, and you eat that particular food, you will get sick of Lassa fever, and when you are infected with Lassa fever, you will transmit it to another person.”— Male, Rural, Kenema*

A few participants mentioned that denial of the existence of Lassa fever continues in some communities, indicating a need for stronger engagement on the topic. Their perception was that many community members shared this belief.

*“Most people do not believe that rats have Lassa fever, as seeing rats in or close to the community is common to everyone here; people are only bothered by the destruction caused to their foodstuffs.”— Male, Rural, Tonkolili*

While many participants attributed Lassa fever to rats in general, only a few mentioned correct transmission pathways; they acknowledged that rats were not the sole source of Lassa fever. Those who reported that they could recognize the rat described it as having a long mouth and tail, features that were similar to other local rodents.

*“They said it is a rat that has a long mouth and a long tail, but we call it as ‘Tuli.’”— Male, Rural, Kenema*

*“That rat that causes Lassa fever: it has a very long tail, plenty [of] breasts, a long and bent mouth, and you hardly see [those] particular [traits] with other rats.”— Male, Rural, Kenema*

While some participants provided a description of the rat that causes Lassa fever, many participants said that identifying the specific rat that transmits the Lassa fever virus was a challenge for community members and an issue they wanted help with.

*“This is the difficult thing about Lassa fever, we are fighting it and telling people not to eat rat that carries Lassa fever, but the people are finding it very difficult to distinguish between the rats that causes Lassa fever and others. So that is why to be on the safer side, we used to tell them not to eat rats, and I think that is the only thing we can tell them, because even you tried to describe that rat, they will not understand.”— Male, Urban, Kenema*

*“Rats are actually responsible for Lassa fever, but not all rats. Actually, I need to correct that statement, there are specific rats with a long tail, long and bent mouth, and are very black than the other rats; I think this is the distinct character they have. Before now, there was a rat they called Tuli which they say is the carrier of Lassa fever, but study has found out that it is not Tuli. But there is a specific rat, though; it has a long mouth just like Tuli but it is not [Tuli].”— Female, Urban, Kenema*

Participants stated they had no way to distinguish rats that were sick and carrying the virus from those that were safe to encounter, an issue that was pertinent to hunting for and consuming rats for food.

They believed that identifying infected rats was only possible through laboratory work. Inability to identify infected rats increased participants' sense of risk for illness from rats.

*“But the major thing here is how can we tell that this particular rat has the sickness? No one can tell except the medical people.”— Male, Rural, Kenema*

*“I think the consequence is death because we don't know the rats that have the Lassa fever, so our lives are at risk.”— Female, Rural, Tonkolili*

While HCWs described person-to-person transmission of Lassa fever, knowledge of this was not prevalent within communities or apparent to community members. Future behavior change activities could target this knowledge gap.

### Knowledge of Symptoms of Lassa Fever

Overall, all HCWs and some community members correctly identified symptoms of Lassa fever as fever, red eyes, and bleeding.

*“Red eyes, too much of headache, high fever. When you have high fever that exceeds three days, you are a great suspect of Lassa fever.”— Female, Rural, Kenema*

While some community members could give signs and symptoms, others could only describe what happens to people that get Lassa fever, such as being taken to the hospital, needing an ambulance, or death. A few participants mentioned that those who recover from Lassa fever have long-term health problems. Some could not identify any signs or symptoms and reiterated that they had never heard of Lassa fever before the interview.

*“They will die and sometimes they survive with deformity.”— Male, Rural, Tonkolili*

*“Like I said, I don't know [Lassa fever] and I can't say anything about that because I have never come across such.”— Male, Rural, Kenema*

Some HCWs, especially those from the KGH Lassa fever ward, had detailed knowledge of human-to-human transmission of Lassa fever (such as mentioning potential spread through body fluids when family members care for sick individuals) but seemed unaware of this mode when asked directly about transmission of Lassa fever.

### Knowledge of Prevention of Lassa Fever

Participants, as indicated in quotes already provided throughout this report, responded to questions about how to prevent infection with Lassa fever and identified several methods they use including getting a cat, cleaning their compounds, using rat poison, building better impenetrable structures, and protecting their food storage areas by sealing up cracks and holes.

## Prevention Behaviors

Individuals described what they do to reduce the population of, and encounters with, rats. They also identified risks of Lassa fever in their communities as well as persons responsible for taking prevention measures.

### Activities to Reduce Rats in the Community

Activities to reduce encounters with rats include educating family members and community members, cleaning bushes, getting a cat, using rat poison, and keeping household compounds clean.

Some individuals described how they have educated family members about correct storage of food as a way to reduce the rat population.

*“Yesterday, I went to my brother’s house and what I saw was surprising. I saw husk rice in the sitting room. I told him that this place has become a breeding ground for rats; this is not the place that you should store your rice.”– Male, Rural, Kenema*

Several participants described getting a cat to manage rat infestations in their homes, however the primary motivation appeared to be to protect their possessions rather than to prevent disease, or both.

*“Rats are common in this community, especially at night. But what I have done to reduce their presence in my home is I bought a cat and kept it as a pet.”– Female, Rural, Kenema*

*“I have tried to get rid of them [rats] but they are still coming in the house, and they have been coming from the nearby bush, but I have decided to come with a cat, because they do come at night and disappear during the daytime.”– Male, Rural, Kenema*

*“What we have done as a family to keep rats off our home is to have three cats which are very aggressive with rats. Before taking cats home, if you cook your food and fail to cover it properly, the rats will not only eat the food, but they will defecate or urinate in the food, which will make the food impossible for the family to eat. This coupled with the Lassa we had, we decided to come with cats. Today you cannot see a single rat in my home. The cats sometimes have to go into the bush to hunt rats or in other houses.”– Male, Rural, Kenema*

While participants implemented multiple strategies, cleaning compounds and surroundings was one strategy that they particularly identified as good for reducing encounters with rats. Cleaning involved both clearing bushes near the home and ensuring good environmental sanitation. Women and children were mainly responsible for cleaning compounds and for disposing of rats and rat waste in the household. Youths were often responsible for communal spaces, but some communities had active cleaning groups and community cleansing exercises.

*“Well, rats are not common now ... first they were around, but since we started cleaning frequently, they [are no longer seen].”– Female, Rural, Kenema*

*“It is not likely for me to come in contact with rats because, as I was saying, I lived in a fenced compound and then we closed the gate every day. At night we open a portion of the gate but not widely, so it is not easy for rats to enter our compound. We also ensure we do cleaning and disinfect the home regularly, and we also have cats. So, all this secures me not to come in contact with rats.”– Female, Urban, Kenema*

Some participants mentioned that they frequently used rat poison and it was effective in getting rid of rats in their home.

*“I came in contact with rats two months ago but after I implemented the rat poison, I am now safe from them.”– Female, Rural, Kenema*

*“At first I was seeing them every day but since I bought the rat poison they have disappeared and have run away.”– Female, Rural, Kenema*

### Activities to Prevent Illness and Lassa fever in the Community

Participants described some of the things they do to prevent getting sick from rats. Prevention behaviors included covering food, handwashing, and cleaning food storage and consumption areas.

*“When we have our food uncovered, the rats will put their mouths [in] and contaminate it, which is why we always cover our food and water.”– Male, Rural, Kenema*

*“My family and I always make sure that we have good, prepared food and food storage; also all the waste [is] taken care of, and cleaning our home and environmental sanitation, and hand washing is also done properly.”– Female, Urban, Kenema*

Participants believed strongly that cleaning the home mitigates their risk of encounters with rats and getting Lassa fever.

*“It is highly unlikely, impossible that I will come in contact with rats because I constantly clean my home, the room where I’m living, we have a room parlor. I always make sure that the place is clean so that I will not come in contact with rats; I am a health worker who works in Lassa department, and I know rats [are] the major cause of Lassa fever and then [it] transfers through human to human.”– Male, Urban, Kenema*

Notably, participants did not mention the need for or how to safely clean up contaminated items, including dust that may contain rat droppings and urine in the home.



Some health workers discussed outreach activities they conduct to educate community members about Lassa fever and how to prevent it.

*“Let me tell you, hemorrhagic fever starting from Lassa, Ebola ... [we] make it clear that rats are the major cause of this illness, and we hope and pray that they will understand what we are telling them. That is why when we do outreach, we always tell people to stop eating rats as they don’t know the specific rat that carries the sickness, and also, they should know that the sickness is real. We [tell them that we] are convinced because we have seen people who have gotten sick and others who did not live to tell that story. So, this is one thing we actually preach to people, and they are cooperating, and the knowledge is there.”– Male, Urban, Kenema*

## Community Needs

Community members unanimously verbalized a need for change in the communities for better rat control and waste management.

## Community Sensitization

Participants asked for continued sensitization about Lassa fever and its causes, including the role of rats and prevention behaviors. Both HCWs and community members echoed this request. Increasing risk perception was also a key issue raised by community members.

*“Community sensitization is the additional work needed. People know Lassa fever exists but are ignoring how deadly and severe the sickness is. People really need to be sensitized at all levels.”– Female, Urban, Kenema*

*“Yes, they are frustrated, tired and want this to end. People want this to change because Lassa fever kills their loved ones, but I cannot easily say ‘yes’ or ‘no’ for Kenema because Lassa fever is not a threat to them. We hope that with time they can expand with sensitization so that everyone in Kenema district becomes aware of the hazards of Lassa fever.”– Female, Urban, Kenema*

*“We need the government to embark on massive sensitization and awareness raising campaigns for the control and prevention of Lassa fever and educate people especially farmers and school children to desist from hunting and eating rats.”– Male, Rural, Kenema*

Some suggested physical needs such as better food storage facilities, supplies of rat poison, paid sanitation officers, and improvement of health care infrastructure for Lassa fever.

*For those rats in homes, we want the government to help us with chemicals to fight these rats so we can be saved from Lassa fever and other diseases that rats cause.”– Male, Rural, Tonkolili*

Health workers noted that they need test kits for diagnosing Lassa fever.

*“[We] have the lab that is equipped, and we have wards that were previously used for the treatment of Lassa fever. All we need is the test kits, as we have been part of this fight for years.”— Male, Rural, Kenema*

## Sources of Information

HCWs were almost always the main source for health information among community members, whether they were based in communities or from the health facilities via outreach. Other sources of health information mentioned included radio broadcasts, local NGOs, and social media.

*“They get health information when they visited the hospital. Also, during meetings at the community barray, most of them do get a lot of health information through the radio and also get a lot of information from the community health workers.”*

*— Female, Rural, Tonkolili*

Generally, community members trusted HCWs and even preferred them as their source of information. Some community members and many HCWs however pointed out that convening meetings in person is difficult, as people are busy, and communities can be scattered and difficult to reach. These individuals thus preferred radio broadcasts, but this preference for radio was less common overall. Other less mentioned trusted sources included town criers and chiefs.

*“The health workers are the trusted source of information for me and other community stakeholders or members. This is because they are always with us in the community, and we believe whatever health information they gave us. So, the community people treat such health information from community health workers with all seriousness.”— Female, Rural, Tonkolili*

*“We conveyed a community message through radio, as this is a very big and busy mining community; it is not easy to bring people together. If you call them for a meeting, few will attend, and that will be the traditional leaders.”— Male, Rural, Tonkolili*

## Health Care Worker Experiences

Interviewers asked a subset of HCW from Kenema a few additional questions pertaining to their work around Lassa fever along with their thoughts, ideas, and advice.

All HCWs from Kenema believed that Lassa fever is a serious threat to public health and strongly wished people in Kenema took it more seriously. As Kenema is a larger urban city, Lassa fever is not as visible as in some of the rural communities, and so residents may not take messaging seriously. Many participants also perceived Lassa fever to be a disease of poor rural areas, which may influence perceptions that addressing it is not important to communities in Kenema. These may negatively affect prevention

strategies like preventing rats and prompt-care seeking for fever. People may instead opt to self-treat their fever as an initial response.

*“Lassa fever is real. People need to stop denying that it is, [and saying] it is fake. And they should visit the hospital for treatment when sick, home treatment is not safe for you and the community because it will create a way of destroying most people’s lives.”– Male, Urban, Kenema*

Many HCWs from the KGH reported that they had conducted work around Lassa fever including sensitization through community events and health messaging campaigns. These community campaigns may also include passive surveillance to detect rural cases. They also worked in the health facilities to identify and treat Lassa fever patients that sought treatment.

*“Our role is to ensure [the community’s] safety and also we do community sensitization. We have a point of temperature: if it is above 35 degrees, we have to do a blood test, and if it is negative, we send you to the general ward. We also have some staff who do radio discussion to sensitize people.”– Male, Urban, Kenema*

While most community members knew about Lassa fever, HCWs felt that people needed to know more about its signs and symptoms. They believed community members typically waited out fevers instead of immediately seeking care. HCWs cautioned that if a person had a severe fever or had a fever that did not improve after several days, then they should seek care from a health worker as soon as they can.

*“Yes, one thing people need to know is that the fever of Lassa is different from the normal fever. The normal fever attacks you [one day, but] before evening, at least you will be 40% better. But for the fever of Lassa, it gets worse every day and anytime, and at that time they should rush with that person to the hospital.”– Male, Rural, Kenema*

In terms of community habits and behaviors that influence the spread of Lassa fever, HCWs discussed that while most communities had stopped consuming rats for food, a few communities still needed additional work to eliminate this practice. HCWs also believed that community members had a limited understanding of human-to-human transmission of Lassa fever and tended to congregate around sick individuals as a way to support them. This behavior, unfortunately, may facilitate increased spread of the illness.

*“When someone is sick the community members will go around that person because of the love they have with that person, and they don’t want the person to feel abandoned. Therefore, they have to be very close to that person, and if the person is at the terminal stage, definitely most of the people around will get infected.”– Male, Urban, Kenema*

HCWs reported few groups engaged in Lassa fever interventions and activities other than the government, although some mentioned Tulane University had conducted research with the KGH Lassa

fever unit. In communities, HCWs typically work with chiefs who have authority, but they also work with Health Development Committees (HDCs) and youth groups to sensitize communities about Lassa fever.

*“That’s why we have HDC in the community; we called for community meetings every week to teach them, most especially on hygiene.”– Female, Rural, Kenema*

*“Like I said we involve the chiefs of the various communities because they have command over their people, and we also tell them how to prevent ... Lassa fever.”– Male, Rural, Kenema*

Regarding challenges, HCWs, and especially those from the KGH Lassa fever ward, spoke of a lack of resources and supplies to conduct Lassa fever-related work at the hospital and during outreach. They hoped for more support from the government to continue their mission. Many communities where Lassa fever is prevalent are hard-to-reach and rural, so being able to access them regularly for surveillance and sensitization would reduce the burden of Lassa fever overall. Some also cited difficulty overcoming community perceptions of Lassa fever, as some communities still struggle to associate Lassa fever with rats or understanding that people can spread it.

*“One of the major challenges in the prevention of Lassa is the attitude of the people. They are aware of the facts that there is Lassa but for them to take the advice as a health worker is a challenge. The associate Lassa as an illness from God and not from rats.”– Female, Rural, Kenema*

## Discussion and Recommendations

This study is the first to examine community-level behaviors that may drive Lassa fever infection in Sierra Leone, and it explores how the context of daily living may affect risk and prevention of Lassa fever. While some studies on Lassa fever in Sierra Leone exist, many of them focus on epidemiological, laboratory, and clinical aspects of disease management, and very few studies assessed behavioral variables or determinants including sociocultural norms. This study successfully explores community member's perceptions, knowledge, and behaviors associated with rodents and Lassa fever. Some key insights included delayed care-seeking, acute knowledge gaps regarding risk and transmission of Lassa fever, low risk perception, and the shared burden communities face against Lassa fever.

The study used qualitative methods, specifically IDIs, to explore behavioral drivers of Lassa fever in Sierra Leone, focusing on two districts, Kenema and Tonkolili, where Lassa fever cases and outbreaks have historically and currently been centered. Thirty community members and 15 health workers from the only Lassa fever ward in the country participated in the study. Main themes identified in the results were related to knowledge, risk perception and behaviors, prevention, care-seeking, and health information.

### Community Context

While rats were reportedly widespread in the study area, Lassa fever was perceived to be an illness among inhabitants of poor rural areas and where farming is the predominant occupation (Gibb et al., 2017). Proximity to farms, lack of appropriate community storage facilities for harvests, and poor food storage practices were mostly associated with an increased presence of rats in communities. Studies conducted in Nigeria have also reported similar perceptions (Gibb et al., 2017; Ilesanmi et al., 2015). Other factors included poor housing structures, inadequate community sanitation amenities, and poor personal and environmental hygiene practices.

### Knowledge of Lassa Fever

The study showed community members had a high awareness of Lassa fever but limited knowledge of details about the disease. These findings were similar to results from studies conducted in Nigeria, which also showed that participants residing in areas of high Lassa fever transmission had a high level of awareness of Lassa fever but only basic knowledge about the signs, symptoms, and transmission of the disease (Usuwa et al., 2020). Awareness and knowledge of Lassa fever was higher among individuals who had encountered Lassa fever themselves, among family members, or within their community. This result contrasts with Awosanya et al.'s (2018) findings of low Lassa fever awareness within an affected community in Nigeria and with the results of an investigation of Lassa fever in Tonkolili in March 2022 (MOHS, 2022). That investigation concluded that there was low community awareness of the disease in the affected community (a small rural village of 79 inhabitants), indicating that clusters within the

general population may be cut off from mainstream information and resources, contributing to low levels of awareness of Lassa fever.

Nonetheless, the study results may be interpreted in consideration of sensitization campaigns about Lassa fever conducted in Sierra Leone. These campaigns had potential to increase awareness and knowledge, compared to the Nigerian study setting where the outbreak was new to the community (Awosanya et al., 2018). As knowledge may be relevant to risk perception, sense of vulnerability, and prevention practices for Lassa fever, supporting campaign activities that promote comprehensive knowledge of Lassa fever may be an effective prevention strategy (Awosanya et al., 2018).

## Risk Perception and Behaviors for Lassa Fever

This study found that many participants had low risk perception for Lassa fever including in Kenema district where Lassa fever cases are treated in the country. Many interviewees voiced complacency regarding actions to prevent exposure to and transmission of Lassa fever. This may be related to habituation to the presence of rats in the environment: many individuals described rats as being ubiquitous and normal in their environment, and they described multiple daily encounters with rats in their towns and homes. Such situations may lead people to become used to the presence of rats in their environment and diminish a sense of urgency and vulnerability to rats, consequently rendering them non-reactive. The research team did not find literature that described similar findings and sentiments.

Opportunities to hunt rats contributed to increased risk behaviors for Lassa fever, and the study identified farmers and young boys as high-risk groups for Lassa fever. Farmers reported having daily encounters with rats on their farms and opportunities to catch them for food and young boys frequently hunted rats for leisure and to sell for money. These findings complement the only other study on Lassa fever behaviors in Sierra Leone, which also concluded that young boys who commonly hunted for and ate rodents were a high-risk group for Lassa fever.

Perceived risk from eating rat meat was variable (Bonwitt et al., 2016). Community members made distinctions between rats found in the bush and rats found in towns and homes, with the latter rat perceived to be associated with Lassa fever and a health risk. Of note, studies have pointed out that the specific carrier for Lassa fever, *Mastomys natalensis*, is found in both the bush and in towns, and community members frequently confuse it with other rat species that people eat (Bonwitt et al., 2016). Participants in this study drew clear lines between bush rats and rats living in their communities, and they expressed a desire to be able to identify the reservoir for Lassa fever. The majority reported that they did not eat rats found in their towns, and they believed bush rats were acceptable and less risky sources of food. Difficulties in helping the general public correctly identify the rat which carries Lassa virus may be a barrier to curbing consumption of rat meat in some communities. Connecting illness to rodent meat in general might be an effective strategy to decrease rat encounters.

Discussing consumption of rat meat appeared to be uncomfortable for some participants from Kenema, but participants from Tonkolili more readily discussed it, often endorsing rat meat and describing the

practice as a norm. This reluctance parallels findings from Bonwitt et al. (2016), where participants felt uncomfortable openly talking about eating rats. The authors theorized this was because of campaigns around the time of their survey that discouraged consumption of rats found in towns; while this did not necessarily stop the practice, it made participants who continued to consume rat meat avoid discussions on the topic. Strategies that rely on interpersonal or group discussions for promoting behavior change may need to consider innovative ways to engage participants and facilitate transparency, truth, and social acceptance without causing distress.

Eating food contaminated by rat waste was identified as the main risk behavior for exposure to Lassa fever. This is similar to findings from Usuwa et al.'s (2020) study in Nigeria. Nonetheless, risk perception among the study participants from Sierra Leone was distorted; many participants characterized contamination dangers in terms of economic and material losses rather than in terms of risk to their and the public's health.

## Prevention Behaviors

The study results identified a limited number of prevention behaviors among the study participants. Proper food storage and plugging up cracks and holes in homes prevented access to rats, personal and environmental cleanliness removed opportunities for rats, and poison and cats kill rats. These actions align with WHO recommendations for preventing Lassa fever (2017) based on good community hygiene which discourages rodents from entering homes, including using appropriate food storage practices, disposing of garbage far from the home, household cleanliness, and keeping cats. Nonetheless community members may need to identify community solutions for safely storing harvest and ensuring environmental sanitation to manage the increased presence of rats in community.

An investigation of Lassa fever cases in Tonkolili district in March 2022 also concluded that health facilities possessed knowledge gaps about infection prevention and control, and they had a limited supply of personal protective equipment for staff (MOHS, 2022).

## Appropriate Care-Seeking

The study showed that community members often delayed care-seeking for Lassa fever, a finding also documented in other reports (Amri, 2022). Similar to other studies (Amri, 2022; MOHS, 2022), this study confirmed that limited knowledge of signs and symptoms of potential Lassa fever, predispositions toward the belief that any fever is malaria, self-treatment of illness, and failure to link encounters with rats and sick individuals with one's own symptoms contributed to delayed diagnosis of Lassa fever, increased community spread, and increased morbidity and mortality (Amri, 2022; MOHS, 2022). Gibb et al. (2017) agree with participant perceptions that early-stage Lassa fever presents similarly to other febrile illnesses, including malaria and typhoid, and Lassa fever is often only suspected after hemorrhagic symptoms develop in the late stages of disease (Gibb et al., 2017).

An investigation of an outbreak of Lassa fever in Tonkolili district in March 2022 also confirmed that the aforementioned factors from this study were instrumental in the spread of illness from the index case (a child) to a sibling (another child), delayed diagnosis, and increased case severity (MOHS, 2022). Both cases tested positive for malaria by rapid diagnostic test and were treated for malaria without improvement, leading to a suspicion of viral hemorrhagic fever. Health providers sent samples to KGH for testing after one child died, confirming a diagnosis of Lassa fever for both cases. The second infected child also eventually died from the disease. Providers did not establish the source of illness; however, those involved with the case believed one sibling acquired the disease from the other. Of the 79 inhabitants in the village, 29 (37%) had contact with the infected children (MOHS, 2022).

## Information Sharing

Studies of Lassa fever in Nigeria reported that the main source of information about Lassa fever was mass media; however, in this study, the majority of participants reported a preference for community-level information sharing. This difference may be due to a greater availability of mass media technology in Nigeria compared to Sierra Leone (Adebimpe, 2015; Usuwa et al., 2020).

## Social and Behavior Change Recommendations

Considering these key results in the context of Sierra Leone, along with studies from other countries, the following recommendations serve as considerations for future interventions and implementations that could lessen the impact of Lassa fever.

### Increasing Early Care-Seeking Behaviors at Health Facilities

A common theme emerged when interviews addressed community-level care seeking behaviors and even individual experiences with Lassa fever. Many participants were aware of Lassa fever, but few described appropriate responses to signs and symptoms of Lassa fever, which is prompt care-seeking from a qualified provider within 24 hours of fever onset. Instead, participants often described self-medication with home remedies, and many assumed their fever was malaria-related, which caused delays in diagnosis and identification of community exposure. This was also noted in the 2022 Lassa fever outbreak in Tonkolili, where caregivers for two patients delayed care until both eventually died. Increasing prompt care-seeking from a qualified provider for fever will not only improve Lassa fever outcomes but malaria and other infectious diseases (MOHS, 2022).

Seeking testing and treatment for any fever must be emphasized in areas where Lassa fever is endemic to ensure early diagnosis, decrease symptom severity, improve recovery, and protect family members from exposure. Even if Lassa fever testing is not available at all facilities, ruling out malaria and typhoid quickly could indicate a potential viral hemorrhagic fever.

Specific interventions to Lassa fever might include linking fever to recent encounters with rats or someone who is sick, which may motivate individuals to seek care for themselves or their dependents. Reinforcing early and prompt assessment of fever at a health facility is a clearly needed message.



Leveraging key health-related influencers including traditional healers, pharmacists, chemical sellers, and advocates with personal experiences with Lassa fever is integral to developing a reinforcement and referral chain in which community members are consistently encouraged to seek care for fever.

### Increasing Knowledge of Lassa Fever

While awareness of Lassa fever was high, community knowledge of transmission and prevention was restricted to a few topics. Providing information about Lassa fever with a focus on routes of transmission beyond eating rats and contaminated food will be beneficial. Using HCWs and community radio to disseminate information about Lassa fever will tap into a large audience that usually relies on health information from these sources rather than other mass media exposure. Such messaging should aim to not only educate people on Lassa fever but also dispel rumors and misinformation spread in communities, as a few responses displayed misconceptions about Lassa fever, including superstition.

User-friendly communication resources and job aids for health workers aligned with key messages for behavior change and sensitization campaigns, such as posters, flipcharts, and pictures that can be used by known and trusted HCWs in rural areas may help increase knowledge among community members. They could also leverage community gatherings, such as weekly markets or holidays, to increase their reach. Given some community members ascribed cases of Lassa fever to religious-based causes, religious leaders might serve as strong communication facilitators that may help dispel rumors, especially given their high status in communities.

### Increasing Risk Perception for Lassa Fever

Perceptions of risk were low for many participants, especially for those in urban Kenema. These participants often under-estimate their risk to Lassa fever and only prevent rats to limit economic damages. Participants rarely mentioned women and children as a high-risk group for Lassa fever, but, given their roles in cleaning the household including handling rodents and their droppings as well as cooking and interacting with food stores, their potential exposure risk should be highlighted. Changing risk perceptions that Lassa fever is only associated with very poor communities may help to expand expected prevention behaviors across communities and all community members. Connecting Lassa fever to negative effects on health (rather than limiting effects to livelihoods) may also motivate communities to protect themselves from possible illness. While everyone could benefit from increasing risk perceptions, specific groups such as farmers, youth and adolescents, and HCWs are at a relatively high risk of Lassa fever in their communities and would benefit the most from interventions.

Lassa fever ambassadors could be used to convey the reality and the seriousness of Lassa fever in their communities. Personal case stories about experiences with Lassa fever relayed by survivors, or families of those who succumbed to illness, may be an effective strategy for motivating unconcerned community members to action. Specific large community events like lumas or holidays are ideal for conveying messages to groups of people from several areas and could promote and amplify messaging further.

## Developing Community-Based Risk Prevention Strategies

When interviewers brought up community level mitigation or prevention solutions, participants mentioned few past health facility outreach activities. Lassa fever can be a highly transmissible disease that puts the whole community, not just an individual, at risk. Those who implement community risk prevention strategies can reduce overall exposure to rats, while sharing costs and labor, for instance, by working with community leaders, local community groups, and programs to develop community-wide solutions for storing harvests. Programs addressing Lassa fever prevention might spark engagement by sponsoring competitions for the best solutions, including at schools, and leveraging the private sector to develop local solutions. They could organize community cleanliness exercises with community groups to ensure that high grass in communal spaces, close to homes, and other areas frequented by rats are cleared up. Options for appropriate and secure storing of food include building structures that are not breached by rats; plugging holes and cracks in roofs, walls, and windows; and other examples are a priority for community members and a way to engage their interest in prevention of Lassa fever. Careful planning will be necessary, so community storage options do not themselves become new hotspots for rats.

## Motivating Individuals for Action by Framing Rats and Lassa Fever Within Community Perceptions

Connecting Lassa fever to rats in a manner that is meaningful to the lived experiences of community members may motivate them to take rat prevention measures and decrease individual and community-level risk. Many individuals lamented the destructive force of rats as a priority challenge. Thus, framing the risk rats pose as beyond health—for instance, emphasizing protecting against waste and ensuring the family can rest easy having food to eat and a pleasant home for family, and having more testimonials from people that have had Lassa fever regarding what they currently do to protect their homes and belongings—could be a helpful element to a behavior change program.

## Developing Effective Community Response Mechanisms

Along the same lines as the last recommendation, Lassa fever and other transmissible diseases can spread panic and fear quickly among communities without strong and effective response mechanisms. This may impede contact tracing and prompt treatment, and it could lead to rumors and misinformation that interfere with prevention program efforts. Effective lines of communication between important community leaders and HCWs could limit the spread of misinformation and panic in these communities and allow people to get treatment quickly. By supporting the development of community action plans aimed to ensure effective community response to Lassa fever cases and outbreaks, programs may accelerate the identification and treatment of cases while also ensuring community members remain calm and cooperative during these exercises.

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