Study on Public Knowledge, Attitudes, and Practices Relating to Ebola Virus Disease (EVD) Prevention and Medical Care in Sierra Leone

September 2014

CRS CATHOLIC RELIEF SERVICES

Focus 1000

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Foreword

On behalf of UNICEF, FOCUS 1000, and Catholic Relief Services, I am pleased to share with you this research report on the Public Knowledge, Attitudes, and Practices study relating to Ebola Virus Disease (EVD) Prevention and Medical Care in Sierra Leone.

The findings from the study provide us with invaluable baseline data to guide our efforts in refining the social mobilization strategies, activities, and messages. Furthermore, the baseline data would help us evaluate the effectiveness of the social mobilization and behavior change communication efforts undertaken through the multi-sectorial response.

Our collective actions are showing some positive results. We now know that awareness of the disease is very high, denial is low, but there are serious misconceptions that we need to address. While there are positive attitudes towards prevention measures and medical seeking behaviours, comprehensive knowledge on the disease is low. But we are pleased to note that nearly everyone interviewed through the study reported some changes in behaviours to help prevent the spread of the infection – with almost 7 in 10 people now washing their hands with soap and water as a protective measure against Ebola.

In conclusion, let me take this opportunity to thank you all for your unwavering contributions towards the social mobilization efforts in halting the unprecedented Ebola epidemic in Sierra Leone and the sub-region. Our collective and sustained action is undoubtedly making a meaningful difference in the fight against Ebola.

Sincerely,

Roeland Monasch
Representative
UNICEF, Sierra Leone

Acknowledgements

We are extremely grateful to all household heads, women, and young people who participated in the research study for their willingness, time commitment and sincere responses. We thank the paramount chiefs, /village chiefs, health workers, teachers, local councils, law enforcement authorities, and civil society groups who participated in the in-depth interviews and focus group discussions. The study would not have been possible without their full cooperation.

Likewise, we extend our sincere gratitude to the data collection teams and supervisors whose diligent efforts ensured reliable and quality outputs from the research study. We further acknowledge the invaluable support of our partner organizations – UNICEF and Catholic Relief Services – for their technical and financial support to the study.

In addition, we recognize the technical guidance and commitment of the Ministry of Health and Sanitation, the Emergency Operation Center and the Communication Pillar to incorporate the findings of the study into the National Social Mobilization Strategy and Action Plan. We are confident that the baseline data will continue to inform and guide our collective efforts to contain the spread of Ebola in Sierra Leone.

FOCUS 1000 remains firmly committed to supporting the Government, development partners and civil society in generating data to inform evidence-based strategies and actions to halt the Ebola epidemic. Together we will win the battle against Ebola.

Sincerely,

Mohammad Bailor Jalloh
Chief Executive Officer
FOCUS 1000, Sierra Leone

List of acronyms and abbreviations

Abbreviation	Definition
ANC	Antenatal clinic
BCC	Behavior Change Communication
C4D	Communication for Development
CBO	Community Based Organization
CDC	US Centers for Disease Control and Prevention
CRS	Catholic Relief Services
CSO	Civil Society Organization
DHMT	District Health Management Team
EOC	Emergency Operation Center
EVD	Ebola Virus Disease
FBO	Faith Based Organization
FGD	Focused Group Discussion
FOCUS 1000	Facilitating and Organizing Communities for Sustainable Development
GoSL	Government of Sierra Leone
HBM	Health Belief Model
HHS	Household Survey
KAP	Knowledge, Attitudes, and Practices
KII	Key Informant Interview
MoHS	Ministry of Health and Sanitation
NGO	Non Governmental Organization
PC	Paramount Chief
RCH	Reproductive and Child Health
SPSS	Statistical Package for Social Science
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

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Map of Sierra Leone

Executive summary

As of September 15th, Sierra Leone has recorded a total of 1503 confirmed cases of Ebola virus disease (EVD) with 325 cumulative survivors and 468 laboratory confirmed deaths[1]. The epidemic which has ravaged Sierra Leone, Guinea and Liberia has been characterized by the World Health Organization (WHO) as one of the most challenging Ebola outbreaks to date. There have been 3685 cumulative cases attributed to EVD in Sierra Leone, Liberia, and Guinea as of August 31st 2014 according to the WHO[2].

The Government of Sierra Leone, development partners, and civil society continue to place a major focus on educating the public on how to prevent the transmission of EVD as well as encouraging people to promptly seek medical care in the event that they experience signs and symptoms associated with the disease. Despite these efforts, public education and social mobilization campaigns were met with varied resistance from communities. Myths, misconceptions, and misinformation about the disease continue to put a strain on the fight against it. There have been widespread stories of people fearing to seek medical treatment and reporting suspected cases.

It was against this background that FOCUS 1000, UNICEF and CRS decided to undertake this current study to:

1. Conduct a household survey to quantitatively examine the public's knowledge, attitudes, and practices related to Ebola Virus Disease (EVD) in the propose districts.
2. Identify barriers that hinder the containment of the EVD epidemic.
3. Use the generated findings to inform evidence-based strategies in preventing the transmission of EVD

Methodology

A multi-stage cluster sampling design with primary sampling units (PSUs) selected with probability relative to their size (PPS) was used in the study. The survey sample comprised1413 individuals from 706 households in Western Rural, Western Urban, Kenema, Kailahun, Bo, Moyamba, Kambia, Port Loko, and Koinadugu districts. This sample size is beyond the minimum sample of approximately 800 in order to attain 95% confidence level and confidence interval of +/- 3.5% given the estimated population of about 6 million as per population estimates from the National Population and Housing Census (Statistics Sierra Leone 2004).

Households were distributed among the 24 enumeration areas (clusters) using the probability proportional to size procedure. Systematic random sampling was used to select households for interviews. The household head was always selected given his/her influential role on the decisions and practices within the household. We randomly selected another participant from the household who was either a woman or young person between ages of 15 and 24.

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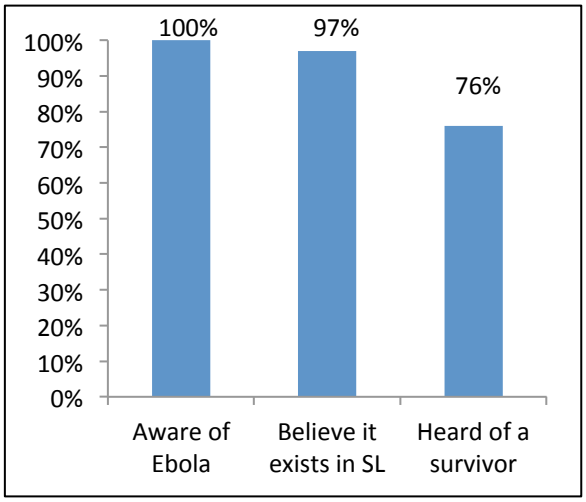
[1] Sierra Leone Ministry of Health and Sanitation, *Ebola Update.* August 7th2014.
[2] World Health Organization, Ebola virus disease update - West Africa, http://www.who.int/csr/don/2014_08_04_ebola/en (Aug 6, 2014).

Key Findings

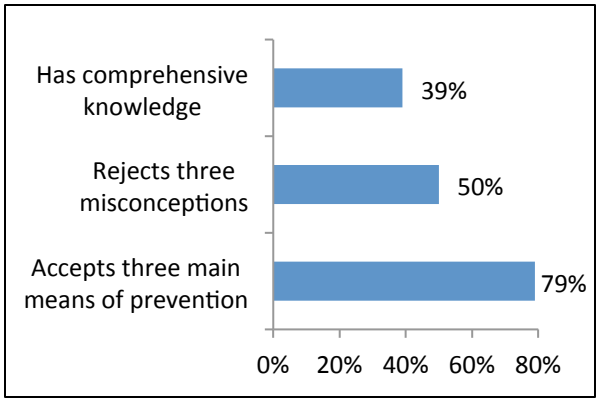
Awareness is high, denial is low, but there are serious misconceptions

Everyone in Sierra Leone has heard of Ebola and nearly everyone believes that it exists in the country (97%). About 77% of respondents have heard of someone who survived Ebola Nonetheless, nearly one-third of respondents believe that EVD is transmitted by air or through mosquito bites. About 2 in 5 respondents believe that they can protect themselves from Ebola by washing with salt and hot water while nearly 1 in 5 believe that spiritual healers can successfully treat the disease – such belief is more higher in Western Urban and Rural (32-45%) as compared to other parts of the country. Regarding risk perceptions, 36% believe that they are at no risk of contracting Ebola within the next 6 months while nearly the same proportion (34%) believes that they are at great risk.



Comprehensive knowledge on EVD is low

Comprehensive knowledge[3] on EVD prevention is generally low. Only 39% of respondents were able to identify three means of prevention and rejected three misconceptions. While not sufficient in itself, comprehensive knowledge is a critical component in increasing the likelihood of individuals to adopt the promoted prevention and medical seeking behaviours.



The study found that nearly everyone would like to receive additional information on EVD (95%); especially on ways to prevent the disease (48%) and medical care/treatment options for those infected.

[3] **Accepts** that EVD can be prevented by: avoiding contact with blood and body fluids; avoiding funeral or burial rituals that require handling the body of someone who has died from Ebola; immediately going to a health facility if suspected of having Ebola**;** and

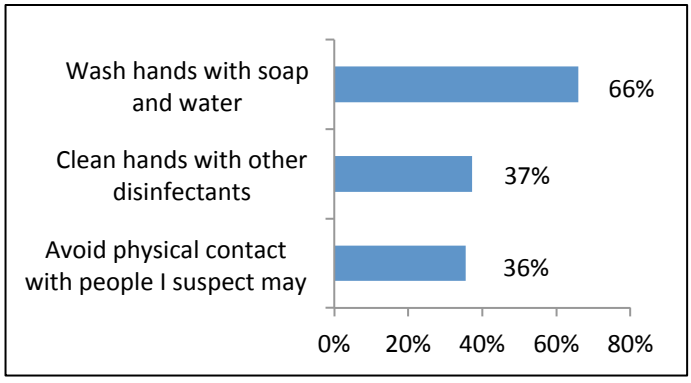
Rejects the notion that: traditional healers can treat Ebola successfully; spiritual healers can treat Ebola successfully; and bathing with salt and hot water can prevent Ebola.

Positive attitudes towards prevention practices and medical care seeking behaviours

- 87% agree with statement that one should "avoid contact with blood and body fluids"
- 85% agree with statement that one can "protect oneself by avoiding funeral or burial rituals that require handling the body of someone who died of EVD"
- 91% agree with statement that a "person with Ebola has higher chance of survival if he/she goes immediately to a health facility"

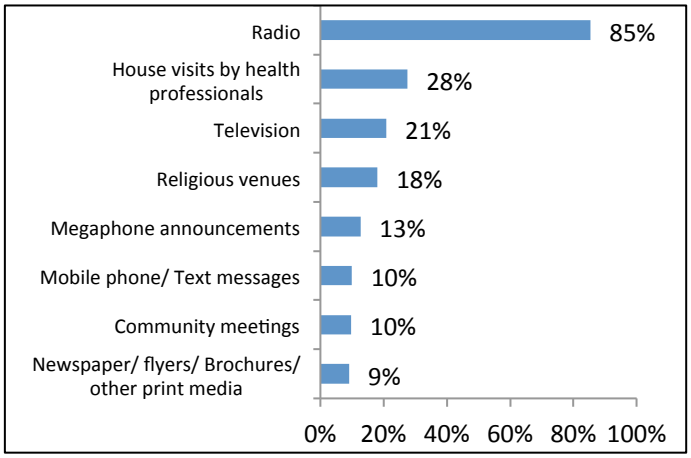
Nearly everyone is reporting some change in behavior

Nearly everyone (95%) is reporting some change in behavior since learning about Ebola. About 7 in 10 respondents reported that they are washing their hands with soap and water in order to help prevent EVD. Hand washing with soap and water is highest in Bo (86%) and Koinadugu districts (84%). However, the percentage of people reporting that they avoid physical contact is alarmingly low (36%).



Radio by far the preferred means for receiving information about Ebola

Not only does radio have the widest reach, it is also the most preferred channel with 85% of respondents preferring to get Ebola related information through the radio. This is followed by house visits by health professions, television, and religious venues (mosques/churches). In the epicenters, house visit by health professionals is the second most preferred means of receiving EVD information (54-63%). Television is more preferred in urban settings such as Western Area and Bo Town as compared to rural parts of the country.



Health professionals and Government/MOHS: the most trusted source of information

Health and medical professionals are perceived to be the most trusted source of information on Ebola related issues (60%). In the Kailahun and Kenema, the level of trust of health professionals ranges from 70 to 86%. Health professionals are least trusted in Western Urban (43%). The second most trusted source of information is the Government/MoHS (48%).

Very high level of stigma and discrimination towards Ebola victims

- 96% report some discriminatory attitude towards people suspected of having (had) Ebola.
- 76% would not welcome a neighbor recovering from Ebola back into their community
- 32% believe that a school pupil fully recovered from Ebola will put other pupils in their class at risk of Ebola infection.
- 9% would keep the information secret if a family member contracts Ebola.

Key recommendations for social mobilization and behavior change communication

- Address misconceptions about the disease;
- Avoid fear-based messages as they may discourage prompt medical seeking behaviors
- Clearly spell out modes of transmission in the local languages;
- Develop clear messages in local languages on protective practices (including burials);
- Develop special messages around community acceptance of Ebola affected persons and families;
- Maximally use radio as it is the most preferred channel with the widest geographic reach;
- Support inter-personal engagement at grassroots level in order to improve community response and ownership of the social mobilization efforts;
- Effectively use television medium to tell survivor stories and create a hopeful narrative;
- Strategically engage religious leaders – via churches and mosques – in disseminating key prevention messages using a faith-based lens and perspective;
- Ensure that key information is communicated directly by health professionals and GoSL/MoHS because they are the most trusted source on Ebola.

Introduction

As of September 15th, Sierra Leone has recorded a total of 1503 confirmed cases of Ebola virus disease (EVD) with 325 cumulative survivors and 468 laboratory confirmed deaths[4]. The epidemic which has ravaged Sierra Leone, Guinea and Liberia has been characterized by the World Health Organization (WHO) as one of the most challenging Ebola outbreaks to date. There have been 3685 cumulative cases attributed to EVD in Sierra Leone, Liberia, and Guinea as of August 31st2014 according to the WHO[5].

The Government of Sierra Leone, development partners, and civil society continue to place a major focus on educating the public on how to prevent the transmission of EVD as well as encouraging people to promptly seek medical care in the event that they experience signs and symptoms associated with the disease. Despite these efforts, public education and social mobilization campaigns were met with varied resistance from communities. Myths, misconceptions, and misinformation about the disease continue to put a strain on the fight against it. There have been widespread stories of people fearing to seek medical treatment and reporting suspected cases.

Reuters documented an instance in July when the family of a woman suspected of having EVD forcefully removed her from the King Harman Government Hospital against the advice of medical professionals[6]. That patient later died of the disease as confirmed by MoHS. One potential barrier in effectively educating the public on EVD is the fact that its signs and symptoms are similar to those of other common diseases in the country such as malaria, typhoid fever, and cholera. The outbreak which was initially concentrated in Kailahun and Kenema districts has now spread to several other parts of the country, with 167 confirmed cases now being reported in the capital city of Freetown (Western Area) according to MoHS. Given its urban setting and dense population, the increase in EVD cases in Freetown poses a serious public health challenge to an already complex situation.

In Kailahun and Kenema, the International Federation of Red Cross and Red Crescent Societies had conducted a KAP study in June 2014 revealing that only 26.7% of respondents in Kailahun and 21.4% in Kenema knew that avoiding the dead remains of an infected individual is a way of preventing the transmission of EVD[7]. In addition, the same study illustrated that only 13.3% of respondents in Kailahun and 7.1% in Kenema knew isolating a family member or neighbor suspected to have contracted EVD is a method limiting the transmission of the disease. While the KAP study in Kenema and Kailahun provided valuable baseline data for the epicenter, its sample size was too small to be representative of the region. To the best of our knowledge, there had not been a national KAP study on Ebola in Sierra Leone. It was against this background that FOCUS 1000, UNICEF and CRS decided to undertake this current study.

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[4] Sierra Leone Ministry of Health and Sanitation, *Ebola Update.* August 7th2014.
[5] World Health Organization, Ebola virus disease update - West Africa, http://www.who.int/csr/don/2014_08_04_ebola/en (Aug 6, 2014).
[6] Reuters, *Sierra Leone Ebola patient, recovered from family, dies in ambulance*, http://uk.reuters.com/article/2014/07/27/uk-health-ebola-africa-idUKKBN0FV0NR20140727 (July 27 2014).
[7] International Federation of Red Cross and Red Crescent Societies, *Knowledge, Attitudes and Practices (KAP Survey on the Ebola Virus Disease (EVD) – Kailahun and Kenema Districts, Sierra Leone* (June 2014).

Objectives

1. Conduct a household survey to quantitatively examine the public's knowledge, attitudes, and practices related to Ebola Virus Disease (EVD) in the propose districts.
2. Identify barriers that hinder the containment of the EVD epidemic.
3. Use the generated evidence to inform evidence-based strategies in preventing the transmission of EVD and enhancing caring for those already infected and affected by the epidemic.

Methodology

Study design

The study employed a cross-sectional design to assess public knowledge, attitudes, and behaviors relating to Ebola Virus Disease (EVD) in Sierra Leone. In addition, focus group discussions and in-depth interviews were conducted with key informants and various community groups in order to gain qualitative understanding of perceived barriers, misconceptions, and bottlenecks in relation to EVD prevention. The research period spanned between 25th July and September 10th 2014. Data collection took place during 20th – 26th August 2014. See Annex 2 for the full study timeline.

Sampling

A multi-stage cluster sampling design with primary sampling units (PSUs) selected with probability relative to their size (PPS) was used in the study. The survey sample comprised 1413 individuals from 707 households in Western Rural, Western Urban, Kenema, Kailahun, Bo, Moyamba, Kambia, Port Loko, and Koinadugu districts. This sample size is beyond the minimum sample of approximately 800 in order to attain 95% confidence level and confidence interval of +/- 3.5% given the estimated population of about 6 million as per population estimates from the National Population and Housing Census (Statistics Sierra Leone 2004).

Selection of districts

Enumeration districts were purposefully selected based on EVD epidemiological trends in the country. Kailahun and Kenema were selected from the Eastern Province; Port Loko, Kambia and Koinadugu from the Northern Province; and Bo and Moyamba from the Southern Province. Both Urban and Rural districts were selected in the Western Area. The rationale being that the Western Area is the most densely populated location in Sierra Leone with growing number of confirmed EVD cases. Kailahun and Kenema were selected as they were the main epicenters. Port Loko at the time had emerged as the district with the third highest number of confirmed cases as of 16th August 2014. Kambia was selected because it is a major border district with Guinea – the index country of the current EVD epidemic. Koinadugu was unique as it remained the only district that had not reported any confirmed case of EVD. Bo shares a border with Kenema and had the fourth highest number of

cases at the time of the research design. Moyamba served as a second enumeration district in the Southern Province given its proximity to Kenema, Bo, Port Loko and Western Area.

Selection of clusters (enumeration areas)

Provincial districts

Across the 7 provincial districts, chiefdoms hosting the district headquarter town were purposively selected given their population density and higher propensity of Ebola Virus Disease burden. An enumeration area within the district headquarter town was randomly selected. Using simple random sampling, a second chiefdom was selected that is approximately within a 35 mile radius from the district headquarter town. The rationale for doing so was that most of the hotspots were within such proximity to the district headquarters. An enumeration area within the headquarter town of the second chiefdom was then randomly selected. The methodology resulted in each district having two enumeration areas. This brings the total number of enumeration areas (clusters) in the provincial districts to 14.

Western Area

We randomly selected 6 out of 8 wards in Western Urban and 2 out of 4 wards from Western Rural. From these selected wards, a total of 10 enumeration areas (3 in WR and 7 in WR) were then randomly selected for inclusion in the study. The 2004 Census List of Enumeration Areas served as the sampling frame for the selection of enumeration areas (clusters).

Table 1: Distribution of population and sample by district

District	Population	Proportion of Population	Sample Size	Proportion of Sample
Western Rural	263,619	6%	92	7%
Western Urban	1,040,888	25%	339	24%
Bo	403,182	10%	151	11%
Moyamba	278,119	7%	127	9%
Kambia	341,690	8%	120	8%
Port Loko	557,978	14%	196	14%
Koinadugu	335,471	8%	119	8%
Kenema	440,883	11%	139	10%
Kailahun	465,048	11%	130	9%
Total	**4,126,878**	100%	**1413**	100%

Selection of households

Households were distributed among the 24 enumeration areas (clusters) using the probability proportional to size procedure. To select households for interview, the enumerators used random

walk method – a form of systematic random sampling – whereby the households were selected as follows:

- Identification of the centre of the sampled community;
- Throwing of a pen up in the air, allowing it to fall, and using the direction of the tip of the pen to identify the starting point of the random walk;
- Estimation of the number of households in the community and estimating the skip-interval defined as number of households divided by the sample for that community;
- The sampling interval (skip)was estimated by the research team in advance of the field work using census projections and provided to the respective data collection teams;
- Counting of the houses in the direction of the pen from the random starting point and selecting every k^{ith} house (using the provided sampling interval) until the required sample of the assigned enumeration area is acquired.

Selection of interviewees

Interviews were conducted with two individuals from each randomly selected household. The household head was always selected given his/her influential role on the decisions and practices within the household. However, anticipating that a majority of the household heads would be older men, we randomly selected another participant from the household who was either a woman or young person between ages of 15 and 24.

Qualitative Data Collection

A total of 20 in-depth interviews and focus group discussions[8]were conducted with local authorities, religious leaders, traditional leaders, health workers, teachers, and law enforcement officials to gather qualitative data on emerging issues including:

- Gaps in knowledge and practice
- Myths and rumors about the origin, cause, preventive measures, and "cures" of EVD
- Perceived barriers to seeking prompt medical care in suspected cases
- Concerns and fears relating to the outbreak
- Recommendations to enhance containment

[8] Qualitative findings are not included in this report as the data is being analyzed. The triangulated findings will be included in a subsequent report.

Training of Data Collectors

FOCUS 1000 recruited and trained30experienced data collectors, 10 team supervisors, and 4regional supervisors during a two-day workshop on the proper administration of the questionnaire. Each enumerator then had the opportunity to pre-test the questionnaire in an assigned community in Western Area. Feedback from the pretest was used to refine the items on the questionnaire. The training focused on the following core areas:

- Overall research protocols and guidelines
- Informed consent
- Safety and security precautions
- Administration of questionnaire
- Quality control and assurance (QA/QC)

The trained data collectors and supervisors were subsequently divided into their respective teams. Each team was assigned to specified geographic clusters. Data collection lasted for a total of 6 days.

Survey Administration, Data Entry, and Analysis

The supervisors were responsible to oversee the day-to-day collection of data by the trained data collectors. In addition to the team supervisors, senior staff from FOCUS 1000 served as regional supervisors to ensure proper quality control. Each enumerator was expected to complete 10-12 questionnaires per day. Four trained data entry clerks were responsible for data entry and processing and worked closely with the FOCUS 1000 team in ensuring data quality and accuracy. Double entry verification was performed on randomly selected questionnaires. Data entry was done using a customized Excel-based system and subsequently analyzed in SPSS.

Limitations

Given the limited resources available and time-sensitivity of the emergency, it was not possible to include all 14 districts in the sample. The nine districts were purposefully selected based on the EVD epidemiological trend at the time of the study design. However, the inclusion of enumeration areas from all 3 provinces and both Western Rural and Urban mitigates the likelihood of sampling bias. Similarly, district headquarter towns were purposively selected as they have recorded higher number of EVD cases as compared to other chiefdoms.

Consequently, the sample contains proportionally more enumeration areas with higher disease burden (such as the epicenter and hotspots for instance). These areas may have higher level of knowledge and better prevention practices relating to EVD as a result of their potential increased exposure to social mobilization and BCC interventions.

Another limitation is that self-reported behaviours may not always be aligned with the individual's actual practices. It is possible that respondents may have provided socially desirable responses; especially due to the high awareness of EVD and heavy dose of sensitization and education being undertaken by undertaken. The in-depth interviews and focus group discussions, however, allowed probe further and gain a more qualitative understanding of the on-the-ground realities.

Findings

Awareness

Everyone in Sierra Leone has heard of Ebola and nearly everyone believes that it exists in the country (97%). Approximately, 77% of respondents have heard of someone who survived Ebola while 53% know the number to call to report suspected EVD cases or ask questions about the disease.

Table 2: Awareness of Ebola Virus Disease

Percentage of respondents who have heard of EVD and know the disease exists in Sierra Leone, 2014

	Have heard of EVD	Believe EVD exists in Sierra Leone	Have heard of people that have survived Ebola	Know the number to call to report a suspected Ebola case or ask questions about Ebola	Total Number
District					
Kambia	100	90.8	60.8	36.7	120
Koinadugu	100	98.3	58.1	41.2	119
Port Loko	100	97.4	74.5	55.6	196
Bo	100	99.3	89.3	64.2	151
Moyamba	100	97.6	63	29.9	127
Kailahun	100	99.2	98.5	58.5	130
Kenema	100	98.6	96.4	51.1	139
Western Urban	100	95.9	71.6	62.5	339
Western Rural	100	94.6	72.8	57.6	92
Age					
15-24	100	96.3	70	54.3	510
25+	100	97.3	80	52.6	881
Education					
None	100	94.4	67.8	31.9	360
Primary	100	98.4	71.3	51.1	188
Secondary +	100	97.6	81.1	62.4	840
Total	**100**	**96.9**	**76.4**	**53**	**1388**

Cause of Ebola Virus Disease

Bats, monkeys, and wild animals are mostly associated with the cause of the disease (74%) as compared to 41% who link the disease to a virus. Respondents with no or low level of education were less likely to associate the origin of EVD to a virus as compared to those with secondary education or higher. Less than 2% of respondents believe that EVD is caused by God, witchcraft, evildoing, or curse.

Table 3: Cause of Ebola Virus Disease (EVD)

Percentage of respondents who have heard about EVD and know the causes of the disease, Sierra Leone,2014

	Heard of EVD	Virus	Bats/Monkeys/ Chimpanzees, other wild animals	God/other higher power	Witchcraft	Evildoing/Sin/	Curse	Number of Respondents
District								
Kambia	100	19.2	65	4.2	0	0	0	120
Koinadugu	100	22.7	86.6	0.8	0	0	0.8	119
Port Loko	100	52.6	71.4	2.6	2	0	0.5	196
Bo	100	67.5	76.2	3.3	1.3	2.6	2.6	151
Moyamba	100	33.9	59.1	3.1	1.6	1.6	2.4	127
Kailahun	100	31.5	82.3	0	0.8	0	0	130
Kenema	100	39.6	84.2	0	0	0	0	139
Western Urban	100	43.7	71.1	1.2	0.6	1.2	0	339
Western Rural	100	40.2	60.9	0	2.2	1.1	1.1	92
Age								
15-24	100	39.9	75.9	1.6	0.8	0.6	1.2	510
25+	100	41.7	71.6	1.7	0.9	0.9	0.3	881
Education								
None	100	29.2	69.7	1.9	0.8	0.3	1.7	360
Primary	100	37.2	72.3	1.1	1.1	2.7	0.5	188
Secondary +	100	47.4	75.4	1.7	0.8	0.5	0.4	840
Total	**100**	**41.3**	**73.5**	**1.7**	**0.9**	**0.7**	**0.7**	**1388**

Modes of transmission

There is low level of knowledge that EVD could be transmitted through contact with an infected person's blood (32%), semen (17%), breast milk (13%), and other bodily fluids (43%). There is higher knowledge on the following modes of transmission: shaking hands or other physical contact with an infected person (55%), eating or preparing bush meat (52%), and eating fruits likely eaten by bats – "bat mot" (33%). Even though inaccurate, 39% of respondents believe that it is possible to contract EVD from an infected person who has not shown any signs or symptoms.

Table 4: Transmission of EVD

Percentage of respondents who have heard about EVD and know its modes of transmission, Sierra Leone,2014

	Heard of EVD	From a person who is infected but doesn't have any signs or symptoms	Eating/preparing bush meat	Eating wild fruits likely eaten by bats	Blood of an infected person	Sperm of an infected person	Breast milk of an infected person	Shaking hands or other physical contact with an infected person	Other fluids from an infect person	Number of respondents
District										
Kambia	100	26.5	42.5	18.3	12.5	0.8	0.8	30.8	15.8	120
Koinadugu	100	35	70.6	28.6	12.6	3.4	0.8	57.1	17.6	119
Port Loko	100	72	62.2	32.7	28.6	11.2	8.2	54.6	46.9	196
Bo	100	31.5	72.8	69.5	87.9	69.5	72.8	83.4	84.1	151
Moyamba	100	31.5	46.5	24.4	15	11	10.2	52	33.9	127
Kailahun	100	40.8	43.1	30	35.4	29.2	13.1	82.3	53.1	130
Kenema	100	34.1	43.2	51.8	46	15.8	5.8	56.8	49.6	139
Western Urban	100	41.4	46.9	16.8	16.2	7.4	1.5	41.3	52.8	339
Western Rural	100	37	41.3	27.2	29.3	2.2	1.2	37	31.5	92
Sex of respondent										
Female	100	37.5	53.4	30	28.5	16	11.5	51.9	42.9	749
Male	100	44.3	51.3	32.7	32.5	16.9	12.8	56.3	49.8	655
Age										
15-24	100	36.7	51.8	30.8	28.7	13.3	9.6	52.7	45.5	510
25+	100	43	52.4	31.9	31.5	18.3	13.6	54.9	46	881
Education										
None	100	35.5	53.1	31.9	27	18.3	11.9	53.9	37.2	360
Primary	100	34.8	54.3	30.9	30.9	16.5	12.8	56.9	44.1	188
Secondary +	100	44.3	52.3	32.3	31.9	16.1	12.3	54	50.7	840
Total	**100**	**38.2**	**52.7**	**32**	**30.5**	**16.7**	**12.3**	**54.4**	**46.3**	**1388**

Misconceptions

Nearly one-third of respondents believe that EVD is transmitted by air or through mosquito bites. Regarding risk perceptions, 36% believe that they are at no risk of contracting Ebola within the next 6 months while nearly the same proportion (34%) believes that they are at great risk.

Table 5: Misconceptions of EVD modes of transmission

Percentage of respondents who have misconceptions on the EVD transmission Sierra Leone, 2014

	Transmitted through:		
	Air	Mosquito bites	Number of Respondents
District			
Kambia	33.9	22.5	120
Koinadugu	30.8	38.7	119
Port Loko	28.4	26.3	186
Bo	32.7	30.7	130
Moyamba	33.3	34.6	127
Kailahun	13.7	30.8	130
Kenema	29.1	35.8	123
Western Urban	34.2	25.4	338
Western Rural	30.8	28.6	91
Sex of respondent			
Female	32.1	32.5	730
Male	28.4	26.3	646
Age			
15-24	29.8	32.3	501
25+	30.5	28	863
Education			
None	36.5	37	349
Primary	34.3	46.2	182
Secondary +	26.9	22.9	829
Total	**30.4**	**29.6**	**1360**

About 2 in 5 respondents believe that they can protect themselves from Ebola by washing with salt and hot water while nearly 1 in 5 believe that spiritual healers can successfully treat the disease – such belief is more higher in Western Urban and Rural (32-45%) as compared to other parts of the country.

Table 6: Misconceptions of EVD treatment and prevention

Percentage of respondents who have misconceptions on the EVD treatment, Sierra Leone, 2014

	Believe that traditional healers can treat Ebola successfully	Believe that spiritual healers can treat Ebola successfully	Believe that bathing with salt and hot water can prevent Ebola	Number of respondents
District				
Kambia	12.7	19.5	49.6	118
Koinadugu	5.9	9.2	27.7	119
Port Loko	3.6	8.7	44.5	196
Bo	2.7	11.3	37.7	150
Moyamba	8.7	25.2	55.8	127
Kailahun	3.1	7.2	50.8	125
Kenema	2.9	11.5	39.4	139
Western Urban	7.1	32.4	39.8	109
Western Rural	4.3	45.1	28.6	41
Sex of respondent				
Female	5.4	20	43.8	741
Male	6	18.7	39.2	653
Age				
15-24	4.7	16.4	43.8	507
25+	6.4	21.5	40.2	874
Education				
None	7.5	21.1	44.6	345
Primary	5.3	16	53.3	184
Secondary +	4.9	19.5	37.6	819
Total	**5.6**	**19.4**	**41.5**	**1348**

Attitudes and perceptions towards prevention

Generally, there are positive attitudes and perceptions towards key means of preventing Ebola such that 87% of respondents agree that they can prevent Ebola by avoiding contact with blood and bodily fluids; 85% agree that they can prevent the disease by avoiding funeral or burial rituals that require handling the body of someone who died from Ebola; and 91% agree that a suspected person reduces the chance of spreading the disease by immediately going to a health facility.

Table 7: Attitudes/perceptions towards means of EVD prevention

Percentage of respondents who correctly identify means of EVD prevention, Sierra Leone, 2014

	Avoiding contact with blood and body fluids	Avoiding funeral or burial rituals that require handling the body of someone who has died from Ebola	A suspected person reduces the chance of spreading Ebola by immediately going to hospital	A suspected person with Ebola has higher chance of survival if he/she goes immediately to a Health Facility	Number of respondents
District					
Kambia	76.3	77.5	77.6	73.9	116
Koinadugu	96.6	64.7	93.3	87.4	119
Port Loko	90.4	96.4	93.4	93	196
Bo	98	90	97.3	97.9	150
Moyamba	85.6	89.8	92.1	89.7	127
Kailahun	90.8	100	97.7	98.5	130
Kenema	75.5	74.3	76.8	94.9	138
Western Urban	85.8	80.8	96.2	87.9	338
Western Rural	84.6	82.6	85.9	88	92
Sex of respondent					
Female	86.7	82.5	90.5	89	747
Male	88	87.5	92.2	91.9	652
Age					
15-24	86.2	81.8	89.8	88.3	508
25+	87.7	86.4	82	91.3	878
Education					
None	82.7	79.7	87.7	85.8	358
Primary	91	80.9	89.4	89.2	188
Secondary +	88.4	87.9	93.2	92.8	837
Total	**87.3**	**84.8**	**91.3**	**90.5**	**1383**

Comprehensive knowledge

Comprehensive knowledge on EVD prevention is generally low. Only 39% of respondents were able to identify three means of prevention and rejected three misconceptions. Comprehensive knowledge of Ebola transmission and prevention is a prerequisite, although insufficient in itself, for the adoption of behaviors that reduce the risk of EVD. Correct knowledge of the false modes of transmission is as important as knowing the correct modes – and enables one to better understand how to protect oneself.

Table 8: Knowledge of means of EVD prevention

Percentage of respondents who correctly identify means of EVD prevention, Sierra Leone, 2014

	Accepts three main means of prevention*		Rejects three misconceptions+		Has comprehensive knowledge (rejects three misconceptions and accepts three prevention means of Ebola)	
	Percent	Number of respondents	Percent	Number of respondents	Percent	Number of respondents
District						
Kambia	79.5	88	35.2	71	27.1	59
Koinadugu	62	108	64.9	94	44.9	89
Port Loko	89.3	169	59.9	162	54.7	148
Bo	92.9	141	61	118	56.9	109
Moyamba	83.9	112	34.1	85	32.5	77
Kailahun	92	125	43.8	105	35.6	101
Kenema	63.8	130	55.1	118	28.9	114
Western Urban	73.7	293	44.2	233	30	210
Western Rural	70.4	81	48	50	32	43
Sex of respondent						
Female	77	652	47.5	537	34.4	486
Male	81	590	53.7	495	44	461
Age						
15-24	74.2	453	48.3	404	34.7	369
25+	81.3	775	51.9	619	41.7	568
Education						
None	75.7	296	45.9	233	33.7	208
Primary	75.7	169	42.3	142	29	131
Secondary +	80.6	763	53.5	650	42.7	600
Total	**78.7**	**1228**	**50.2**	**1025**	**38.8**	**939**

*__Accepts__ that EVD can be prevented by: avoiding contact with blood and body fluids; avoiding funeral or burial rituals that require handling the body of someone who has died from Ebola; immediately going to a health facility if suspected of having Ebola

+__Rejects__ that: traditional healers can treat Ebola successfully; spiritual healers can treat Ebola successfully; and bathing with salt and hot water can prevent Ebola

Current information channels

Radio is by far the primary channel of receiving information on EVD (88%), followed by religious venues (42%), megaphone announcements (21%) and television (21%). In the most affected areas (Kenema and Kailahun), religious venues such as churches and mosques have a 65-75% reach. About 40-43% of respondents from urban areas (Western Urban and Bo are) receive EVD information through television.

Table 9: Current means of receiving information about EVD

Percentage of respondents who report to have learned about Ebola from the following means in Sierra Leone, 2014

	Radio	Television	Megaphone/ public announcements	Church/ mosque/ other religious venues	Community meetings	Newspaper/ flyers/ Brochures/ other print media	Mobile phone/ Text messages	Number of respondents
District								
Kambia	86.7	2.1	29.2	29.2	5	2.5	0.8	120
Koinadugu	95	10.1	18.8	31.1	13.4	9.2	0	119
Port Loko	93.4	8.2	10.7	29.1	23.5	10.7	2	196
Bo	95.4	39.7	26.5	31.1	14.6	4	0	151
Moyamba	77.2	6.3	18.1	38.6	10.2	3.1	0	127
Kailahun	98.5	10	40	74.6	13.1	15.4	0	130
Kenema	79.1	10.1	43.2	64.7	9.4	8.6	0	139
Western Urban	85.5	43.7	15.6	32.7	10	5.9	0.3	339
Western Rural	76.1	16.3	13	47.8	6.5	16.3	1.1	92
Sex of respondent								
Female	87	20.6	23.8	42.1	9.3	6.3	0.4	749
Male	89	20.6	20	38.5	15.6	9.9	0.5	655
Age								
15-24	86.1	21	21.6	42.9	10.2	7.8	0.4	510
25+	88.8	20.3	22	39	13.4	7.8	0.6	881
Education								
None	84.7	12.5	23.6	40	5.6	2.2	0.8	360
Primary	86.2	19.7	29.3	51.1	10.1	4.8	0	188
Secondary +	89.5	24.5	19.8	38.7	15.8	11.2	0.5	840
Total	**87.8**	**20.7**	**22**	**40.7**	**12.4**	**8**	**0.5**	**1388**

Preferred information channels

Not only does radio have the widest reach, it is also the most preferred channel with 85% of respondents preferring to get Ebola related information through the radio. This is followed by house visits by health professions (28%), television (21%), religious venues (18%), megaphone/public announcements (13%), and mobile phones / text messages (11%). The least preferred channels are: community meetings (10%) and print sources (9%). In the epicenters, house visit by health professionals is the second most preferred means of receiving EVD information (54-63%). Television is more preferred in urban settings such as Western Area and Bo Town as compared to rural parts of the country.

Table 10: Preference of means of receiving information about EVD

Percentage of respondents who prefer to get information about Ebola from the following means Sierra Leone, 2014

	Radio	Television	Megaphone/public announcements	House visits by health professionals	Church/ mosque/ other religious venues	Community meetings	Newspaper/ flyers/ Brochures/ other print media	Mobile phone/ Text messages	Number of respondents
District									
Kambia	78.3	3.3	18.5	21.7	13.3	5	1.7	3.3	120
Koinadugu	89.9	10.9	13.4	19.3	14.3	11.8	8.4	23.5	119
Port Loko	87.8	7.7	6.1	20.4	22.4	10.2	19.9	14.3	196
Bo	94.7	35.1	18.5	32.5	31.8	10.6	6.6	23.8	151
Moyamba	82.7	3.9	15.7	14.2	2.4	10.2	5.5	1.6	127
Kailahun	96.9	12.3	23.1	63.1	29.2	16.2	11.5	7.7	130
Kenema	79.9	8.6	18	54	29.5	5.8	4.3	12.9	139
Western Urban	81.4	48.7	8.6	13	9.1	9.4	7.4	2.7	339
Western Rural	73.9	10.9	12	32.6	15.2	5.4	15.2	4.3	92
Sex of respondent									
Female	86	21.6	13.2	28	18.8	9.6	8	10	749
Male	84.4	20	11.9	26.7	16.9	9.6	10.4	9.6	655
Age									
15-24	84.3	21	10.6	25.5	15.7	7.5	11	10.4	510
25+	85.4	20.8	13.4	28.5	19.1	10.9	7.9	9.1	881
Education									
None	84.4	12.8	15.6	29.2	22.8	9.7	4.2	11.7	360
Primary	82.4	16.5	16.5	33.5	18.1	13.3	3.2	6.4	188
Secondary +	86.5	25.4	10.6	25.6	16	8.8	12.7	10.1	840
Total	**85.4**	**20.9**	**12.7**	**27.6**	**18**	**9.7**	**9.2**	**10**	**1388**

Trusted sources of information

Health and medical professionals are perceived to be the most trusted source of information on Ebola related issues (60%). In the Kailahun and Kenema, the level of trust of health professionals ranges from 70 to 86%. Health professionals are least trusted in Western Urban (43%). The second most trusted source of information is the Government/MoHS (48%).

Table 11: Trusted sources of information about EVD

Percentage of respondents who identify various means to be trusted in getting information about Ebola in Sierra Leone, 2014

	Government/ MoHS	The Media	Health / medical professionals	Relatives and Friends	Religious leaders (e.g. Pastor, Imam)	Traditional leaders	Number of respondents
District							
Kambia	22.5	26.7	60.8	6.7	5	0	120
Koinadugu	63	37	70.6	2.5	4.2	0	119
Port Loko	65.8	41.8	40.3	2.6	0.5	0	196
Bo	50.3	43.7	78.8	10.6	24.5	0	151
Moyamba	36.2	15	67.7	3.9	0	0	127
Kailahun	60.8	17.7	86.2	8.5	8.5	0.8	130
Kenema	61.9	41	66.9	28.1	20.9	1.4	139
Western Urban	35.4	44.2	42.8	6.5	4.7	0	339
Western Rural	44.6	26.1	56.5	2.2	9.8	1.1	92
Sex of respondent							
Female	48.5	38.1	58.5	9.1	8.3	0.3	749
Male	47.8	32.2	61.2	6.6	7.9	0.3	655
Age							
15-24	48.2	35.7	55.9	8.4	6.3	0.2	510
25+	47.8	35	62.2	7.7	9.2	0.3	881
Education							
None	47.2	36.9	60.6	9.7	10.8	0.3	360
Primary	45.7	40.4	59	10.6	8.5	0	188
Secondary +	49.4	33.9	59.8	6.5	6.9	0.4	840
Total	**48.3**	**35.6**	**59.9**	**7.9**	**8.1**	**0.3**	**1388**

Information gaps

Nearly everyone (94%) would like to get more information about Ebola – especially on ways to prevent the disease as well as medical care and treatment options for infected persons.

Table 12: Need for additional information about EVD

Percentage of respondents who want to get more information about Ebola from the following areas Sierra Leone, 2014

	Respondents who need more information on Ebola	Cause / origin of the disease	Signs and symptoms of the disease	Ways to prevent the disease	Medical care and treatment options	Number of respondents
District						
Kambia	94.9	28.6	15	60.8	29.2	120
Koinadugu	98.3	23.5	10.9	54.6	48.7	119
Port Loko	91.8	23.5	23	38.3	17.9	196
Bo	96.6	29.8	45	82.8	57	151
Moyamba	92.1	37	11	47.2	9.4	127
Kailahun	87.7	10	14.6	69.2	29.2	130
Kenema	90.9	23.7	26.6	39.6	56.8	139
Western Urban	93.5	20.4	12.4	46.6	34.2	339
Western Rural	96.7	31.5	26.1	40.2	20.7	92
Sex of respondent						
Female	93.5	25.1	18.6	52.6	36.8	749
Male	93.4	23.4	21.5	52.1	30.7	655
Age						
15-24	93.7	23.8	17.6	48.4	33.9	510
25+	93.6	24.4	20.9	54.8	33.8	881
Education						
None	90.7	28.6	20.6	53.3	34.4	360
Primary	93	35.8	23.3	46.3	38.3	188
Secondary +	94.7	20	19.2	53.3	32.9	840
Total	**93.5**	**24.4**	**20**	**52.4**	**34**	**1388**

Behaviors and practices

Nearly everyone (95%) is reporting some change in behavior since learning about Ebola. However, the percentage of people reporting that they avoid physical contact is alarmingly low (36%).

Table 13: Reported changes of behaviour to prevent EVD

Percentage of respondents who have changed their behaviour since hearing about Ebola Sierra Leone, 2014

		Type of change behavior						
	Respondents who reported change of behaviour since hearing of Ebola	Wash hands with soap and water	clean hands with other disinfectants	Drink traditional herbs	Take antibiotics	Wear gloves and protective clothing	I try to avoid physical contact with people I suspect may have Ebola	Number of respondents
District								
Kambia	80	58	16.9	7.5	0	3.3	15	120
Koinadugu	95	81.7	11	0	0.8	0	27.7	119
Port Loko	95.9	54.8	20.4	0	0.5	3.6	14.6	192
Bo	98	84.1	86.8	6.6	5.3	10.6	76.8	151
Moyamba	98.4	65.4	28.3	0.8	0	2.4	30.7	127
Kailahun	97.7	78.5	56.2	1.5	2.3	5.4	82.3	130
Kenema	99.3	49.6	74.8	0	1.4	5	66.9	139
Western Urban	95.3	69.6	21.2	0.3	0	2.1	16.2	339
Western Rural	93.5	40.2	33.7	0	1.1	0	9.8	92
Sex of respondent								
Female	94	68.8	39.5	1.7	0.9	4.3	36.1	746
Male	96.6	62.4	34.6	1.4	1.2	2.8	34.9	654
Age								
15-24	95.5	66.6	34.3	0.8	1.4	3.1	32.9	508
25+	95	65.1	39	2	1	3.9	36.6	879
Education								
None	90.3	68.3	34.7	2.8	0.3	2.2	42.1	359
Primary	96.3	68.8	40.1	2.1	1.6	5.9	39.9	188
Secondary +	97.1	64.2	37.8	1	1.4	3.8	31.8	837
Total	**95.2**	**65.9**	**37.3**	**1.6**	**1.2**	**3.7**	**35.5**	**1384**

Medical care and treatment

About 86% of respondents reported that they would go to a health facility if they experience a high fever, and an even greater proportion (95%) reporting that they would do so if they are suspected to have contracted Ebola. In Western Rural, a lower proportion of respondents shared that they would go to a health facility if they have a high fever (60%) or suspect they have contracted Ebola (80%).

Table 14: EVD medical care seeking attitudes

Percentage of respondents who agree to go or not go to hospital/health facility in Sierra Leone, 2014 if:

	Respondents who reported change of behaviour since hearing of Ebola	Go to Hospital / health facility		
		Have high fever	They suspect to have contracted Ebola	Number of respondents
District				
Kambia	80	82.1	83.3	120
Koinadugu	95	81.2	95.8	119
Port Loko	95.9	89.2	96.4	193
Bo	98	96.6	96.7	151
Moyamba	98.4	78	91.3	127
Kailahun	97.7	98.4	97.7	130
Kenema	99.3	92	95.7	139
Western Urban	95.3	82.8	93.2	339
Western Rural	93.5	60.4	80.4	92
Sex				
Female	94	83.9	91.7	597
Male	96.6	87.4	94.8	512
Age				
15-24	95.5	83.3	92.3	401
25+	95	86.9	93.6	697
Education				
None	90.3	83.7	89.1	288
Primary	96.3	88.2	91	143
Secondary +	97.1	85.6	95.5	664
Total	**95.2**	**85.5**	**93.2**	**1095**

Stigma and discrimination

There is very high level of stigma and discrimination towards Ebola victims such that 76% of respondents would not be welcoming towards a neighbor who has recovered from Ebola (and provided a Government issued certificate). Similarly, 67% of the population would not buy from a shopkeeper who had contracted Ebola but has recovered and declared well.

Table 15: Attitude towards people having or suspected of having EVD

Percentage of respondents expressing attitudes towards those with or suspected of having Ebola, Sierra Leone, 2014 if:

	Would not buy from a shopkeeper who had contacted Ebola but has recovered and declared well	Would keep the information secret if a family member contracts Ebola	Believes a pupil puts other pupils in their class at risk of Ebola after he/she has recovered and declared well	Would not welcome someone back into their community/neighbourhood after a neighbor has recovered from Ebola	Respondents who report some discriminatory attitude towards people with suspected or having Ebola	Number of respondents
District						
Kambia	51.7	14.2	28.3	70	95.8	120
Koinadugu	45.2	15.1	47.9	49.6	92.6	119
Port Loko	74.5	5.6	34.9	77.6	95.9	196
Bo	84.1	16.6	57	88.1	84.1	151
Moyamba	57.5	12.1	32.8	66.9	99.2	122
Kailahun	80	4.6	5.6	85.4	99.2	130
Kenema	77	5	15.8	82.7	99.3	139
Western Urban	64	9.1	30.3	79.9	96.4	337
Western Rural	48.9	3.3	40.7	61.5	100	92
Sex of respondent						
Female	62.3	9.5	31.3	71.1	96.4	745
Male	70.5	9.5	33.6	80.5	94.8	652
Age						
15-24	62.4	9	33.1	72.1	95.5	507
25+	68	9.7	31.6	77.3	95.8	877
Education						
None	58.9	11	31.8	66.9	96.9	360
Primary	64.9	10.4	31.6	71.3	94.1	188
Secondary +	70.2	8.6	32.6	80.8	95.5	839
Total	**66.6**	**9.4**	**32.3**	**75.9**	**95.7**	**1381**

Treatment centers and quarantine

There is high acceptance (89%) of quarantining individuals who have been in direct contact with a person that has been diagnosed with Ebola. Western Rural has the lowest acceptance level of this practice (67%) as compared to the rest of the country. Nearly everyone (95%) believes that individuals diagnosed with the disease must be admitted in an Ebola Treatment Center.

Table 16: Attitude towards treatment/management of people having or suspected of having EVD

Percentage of respondents express attitudes towards treatment for those with or suspected of having Ebola, Sierra Leone, 2014 if:

	Agree that if a person has been diagnosed with Ebola he/she must be admitted in an Ebola Treatment Centre	Agree that people who have been in direct contact with a person who has been diagnosed with Ebola must be quarantined for 3 weeks	Number of respondents
District			
Kambia	85.8	76.7	120
Koinadugu	98.5	81.5	119
Port Loko	94.4	95.3	191
Bo	98	96.7	151
Moyamba	89.8	80.2	126
Kailahun	98.5	99.2	130
Kenema	95	96.4	138
Western Urban	97.1	90.8	338
Western Rural	93.3	66.7	90
Sex of respondent			
Female	94.6	89.2	742
Male	95.6	88.7	652
Age			
15-24	94.5	87.9	505
25+	95.3	89.4	877
Education			
None	91.9	85.4	356
Primary	94.1	88.2	186
Secondary +	96.7	91.3	836
Total	**95.1**	**89.3**	**1378**

Vaccine and treatment options

Table 17: Attitude towards vaccines and treatment options

Percentage of respondents expressing acceptance of approved vaccines, trial vaccines, and experimental drugs for Ebola Virus Disease, Sierra Leone, 2014 if:

	Accept to take an approved vaccine that could prevent Ebola	Accept to give an approved vaccine to my children that could prevent Ebola	Willing to accept an experimental treatment for Ebola even when not tried yet in humans	Willing to let relative accept an experimental treatment for Ebola even when not tried yet in humans	Number of respondents
District					
Kambia	88.2	86.7	29.1	29.9	117
Koinadugu	93.3	90.7	67.5	70.4	115
Port Loko	97.4	95.8	52.1	52.3	193
Bo	96	94	78.8	78.8	151
Moyamba	84.9	81.6	41.6	40.9	127
Kailahun	96.9	96.2	83.7	86.2	130
Kenema	92.8	91.6	72.7	74.1	139
Western Urban	83.8	85	61.9	60.5	339
Western Rural	73	68.5	38	39.1	92
Sex of respondent					
Female	88	86.4	55.5	55.6	745
Male	91.8	91.1	64.8	65.6	649
Age					
15-24	89.1	87	56.7	57.1	504
25+	89.9	89.3	61.4	61.7	877
Education					
None	87.7	86.1	56.6	56.3	359
Primary	82.9	77.8	62.4	61.5	187
Secondary +	92.2	91.9	61.2	62.1	832
Total	**89.7**	**88.6**	**60.1**	**60.5**	**1378**