Review of MSF-OCA surveillance and alert response in Freetown during the Ebola outbreak: lessons learned and challenges

Médecins Sans Frontières

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Review of MSF-OCA surveillance and alert response in Freetown during the Ebola outbreak: lessons learned and challenges

Main Objective: Assess the perspectives of epidemiologists and other practitioners on the EVD surveillance response carried out in Freetown December 2014 – November 2015.

Sites: Desk-based

Proposed start date of data collection: January 2016

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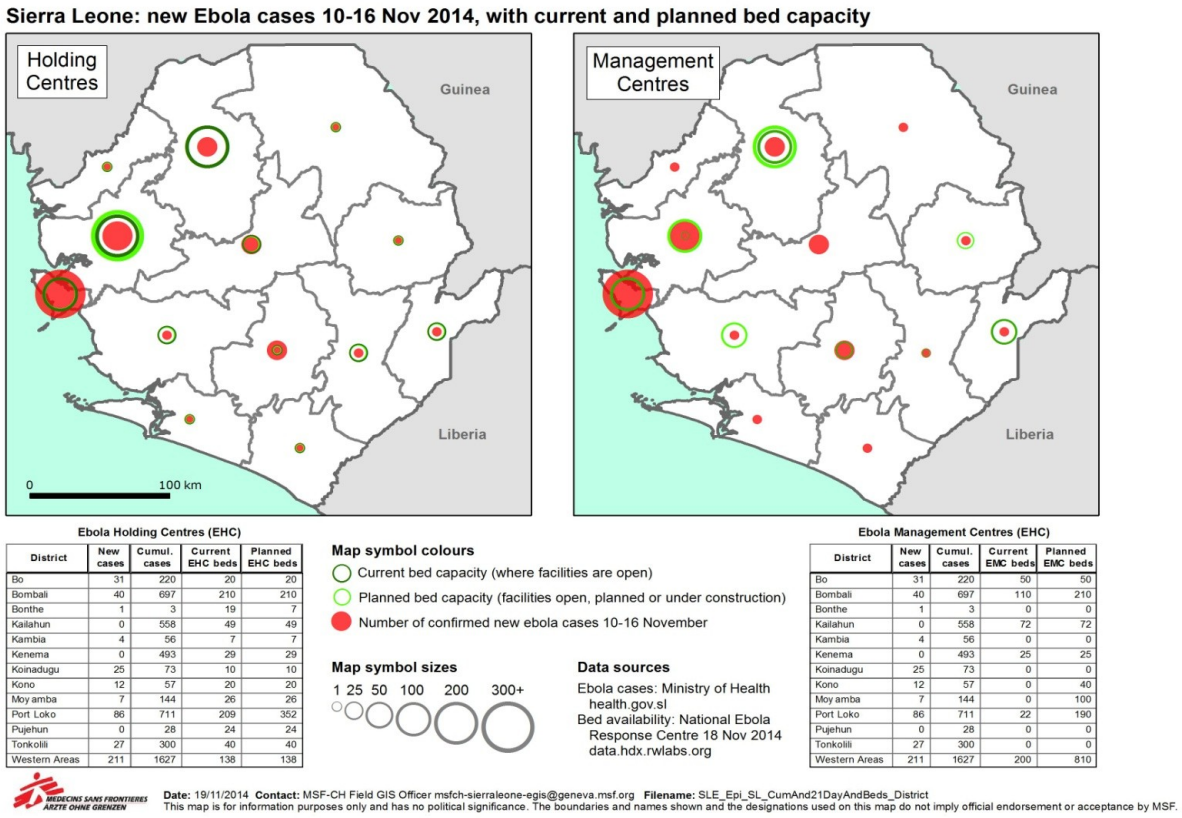
1. Background

1.1 Ebola in Sierra Leone

As of 25 November 2015 there have been 28,601 cases of Ebola across Guinea, Liberia and Sierra Leone, with 11.299 deaths. Ebola virus disease (EVD) was first detected in Sierra Leone in May 2014 and it has seen the largest number of cases (14,122) of any country**.** In November 2014, the **numbers of beds were not** sufficient to isolate cases and **th**erefore **stop EVD** transmission (see Figure 1). The disease spread to the capital Freetown in July 2014, and as the number of cases increased, infected people were not being detected by the surveillance systems in place until point of death or post mortum. The slums were overcrowded, with poor access to healthcare and there was minimal Ebola Management Centre (EMC) bed capacity to accept confirmed cases.



Ebola Holding Centres (EHC)

District	New cases	Cumul. cases	Current EHC beds	Planned EHC beds
Bo	31	220	20	20
Bombali	40	697	210	210
Bonthe	1	3	19	7
Kailahun	0	558	49	49
Kambia	4	56	7	7
Kenema	0	493	29	29
Koinadugu	25	73	10	10
Kono	12	57	20	20
Moy amba	7	144	26	26
Port Loko	86	711	209	352
Pujehun	0	28	24	24
Tonkolili	27	300	40	40
Western Areas	211	1627	138	138

Ebola Management Centres (EHC)

District	New cases	Cumul. cases	Current EMC beds	Planned EMC beds
Bo	31	220	50	50
Bombali	40	697	110	210
Bonthe	1	3	0	0
Kailahun	0	558	72	72
Kambia	4	56	0	0
Kenema	0	493	25	25
Koinadugu	25	73	0	0
Kono	12	57	0	40
Moy amba	7	144	0	100
Port Loko	86	711	22	190
Pujehun	0	28	0	0
Tonkolili	27	300	0	0
Western Areas	211	1627	200	810

Figure 1: New Ebola cases and bed capacity, November 2014

1.2 Intervention pillar to control Ebola

Defining concepts:

i) Surveillance is the ongoing systematic collection, analysis, interpretation and disemmination of health data to guide healthcare services. Active surveillance increases the likelihood of detecting cases at an early stage of the disease and therefore improving chances of survival.

ii) Contact tracing is the process of identifying, assessing, and managing people who have been exposed to EVD. Once identified, contacts are systematically followed for 21 days since their most recent exposure. If they become symptomatic, they can be quickly isolated, reducing exposure to other people and preventing subsequent infection. In addition, if contacts develop symptoms and are promptly admitted to an Ebola Management Centre (EMC), this can improve chances of survival.

iii) Social mobilisation involves getting the support and cooperation of the population to help control the disease. Social mobilisation includes door-to-door health promotion , media campaigns and education sessions in the community, to aid behaviour change in the population. These messages should not stigmatise or marginalise patients and their families, but instead should promote practical steps to stop EVD transmission by providing information on e.g. importance of early prevention, how to seek treatment, and safe burial practices.

iv) Quarantine is a preventative measure and occurs when a healthy person has been exposed to an infectious disease. The individual undergoes a period of close observation for the length of the incubation period in order to prevent disease transmission. In the case of Ebola, individuals are asked to stay at home for 21 days since their last possible exposure. Quarantined individuals should receive food water and healthcare provision. In this outbreak, quarantines were imposed at individual, household and community levels in Sierra Leone, including 3-day countrywide quarantines in September 2014 and March 2015.

1.3 Ebola surveillance in Freetown

Western Area Urban, which comprises Freetown, is the most densely populated part of Sierra Leone and so far has experienced the greatest burden from Ebola. The District Ebola Response Committee (DERC) is responsible for coordinating the district level response. Prior to MSF's intervention, surveillance in Freetown was managed by the MOH and other actors i.e. WHO/CDC.

Previous outbreaks have demonstrated that decentralised mechanisms improve the quality of surveillance, and overall management of key response activities. The Western district is divided into 69 wards (see Figure 2) and in each ward the District Surveillance Officer (DSO) is responsible for working together with local chiefs, community monitors and local health facilities for the timely detection of new cases. In December 2014 MSF staff accompanied the DSO as they implemented an alert and response strategy known as the Western Surge and noticed a number of critical gaps at all levels.

The DSO manages surveillance officers and supervisors who in turn manage many contract tracing volunteers. The community control of Ebola relies on active case-finding, contact tracing and monitoring and quickly isolating suspected cases early. This requires a large amount of human resources, however, MSF found that staff numbers were limited and there was often poor supervision and support in the field. Staff were faced with numerous transport and

communication challenges and the DSOs were often inadequately trained and unable to identify chains of transmission.

In each ward the DSO was informed of alerts via the Central command (117 calls) and by the local monitors/heath centre/local chief. The DSO is in charge of verifying the alerts and calling the central command to request an ambulance or a burial team depending on the outcome of investigation. In theory, the central command then dispatches ambulances and allocates patients according to bed availability. Once the ambulance arrives the family is informed of the patient's destination. However. MSF found that /incomplete case information was often taken by the call centre and there were frequent delays in collecting suspect cases by ambulance. In addition, laboratory results were not being communicated accurately between the various intervention pillars, and there were poor/incomplete disinfection and infection control practices. Alongside this, there was no mechanism to tell families where their loved ones had been taken to and with the patient often dying without the family's knowledge.

MSF staff also found that supplies of food and water were not reaching quarantined persons, a requirement that the government has an obligation to fulfil. Quarantines were often inadequately monitored, with individuals continuing to breach regulations, making them ineffective from a public health perspective and disproportionately affecting people who could not evade the measures.

Based on these observations, In December 2015, it was agreed that MSF Operational Centre Amsterdam (OCA) would engage in surveillance activities in Freetown, to help reduce transmission of the disease.

1.3 MSF in Freetown

On 26 January 2015, MSF-OCA started an outreach project in the community in Freetown to support epidemiological activities and improve coordination efforts in order to reduce ongoing transmission of Ebola and reducing mortality during the final phase of the outbreak. The project aimed to complement existing health activities and services, rather than introducing a vertical approach, and thus used existing procedures and structures in cooperation with different partners (CDC, WHO, African Union, MOH) under the coordination of the Western Area District Ebola Response Centre (DERC)). Under this coordination, MSF was assigned nine wards (MSF wards) in Western Area Urban. The MSF-OCA team consisted of epidemiologists, medical doctors, nurses, health promoters & hygienists

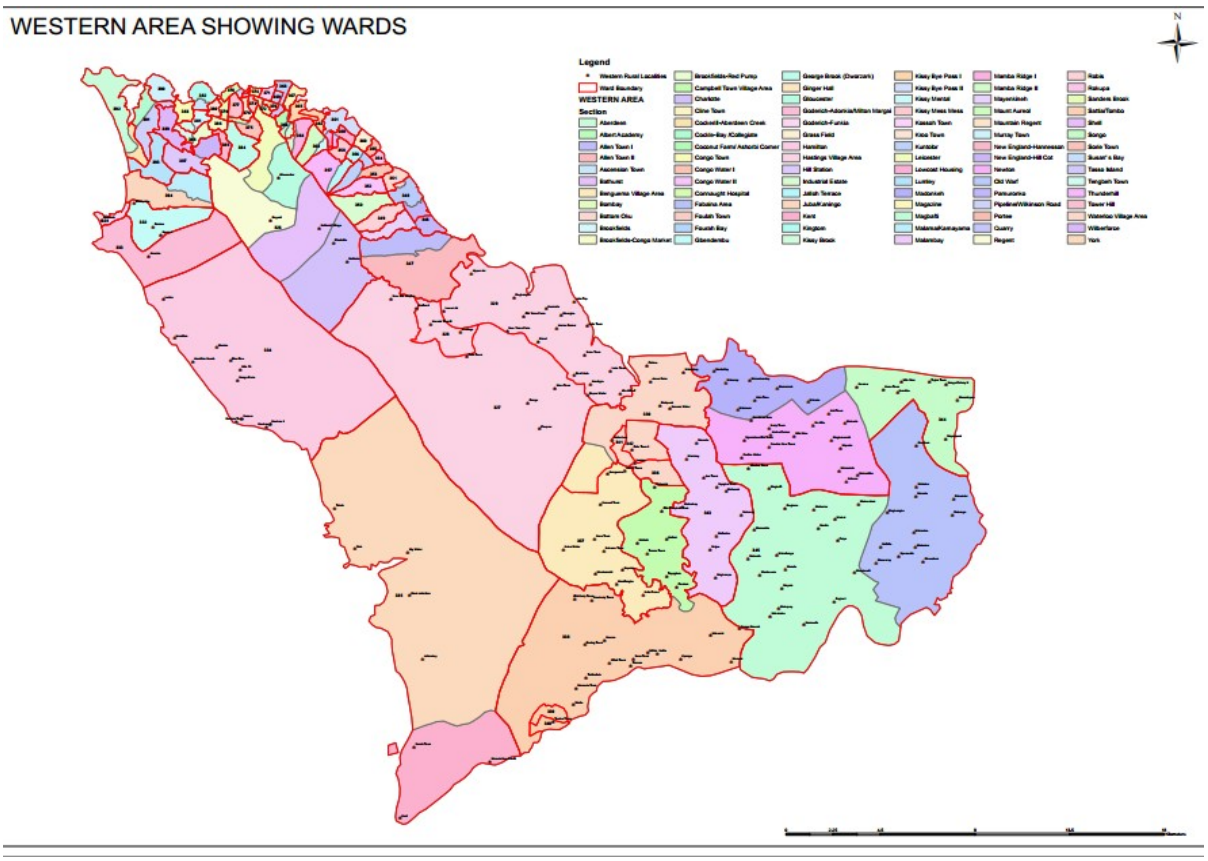


Figure 2: Map of Western Area, Sierra Leone showing wards

1.4 Aims and objectives of the MSF-OCA Freetown surveillance intervention

Aim: To reduce suffering, morbidity and mortality by containing and reducing the spread of Ebola Virus Disease (EVD), while preserving human dignity for the affected population in Sierra Leone.

Purpose: To reduce and ultimately eliminate the transmission of EVD in a defined catchment population in Freetown.

Objectives:

- Provide epidemiological technical support to intensify surveillance, supervision of the alert response and enhanced case investigation in the defined area.
- Assess and respond to current gaps in infection prevention and control, water and sanitation, and triage in health facilities within the defined area.
- Assess community social mobilisation, health promotion, contact tracing and quarantine interventions in the defined area and respond to any gaps through advocacy towards the relevant pillar/organization and/or through direct MSF intervention.
- Prioritise MSF and health staff safety & biosecurity at all times
- Medical (non-Ebola) and humanitarian needs of the population are monitored, recorded, analysed and responded to through advocacy or MSF action.

1.5 Rationale for the proposed evaluation

Since this is the first time MSF OCA has engaged in this type of surveillance activity it is important to understand views on the challenges and achievements experienced in this response. Documenting such perceptions will help to MSF understand how best to respond to future outbreaks.

2. Aim and objectives of evaluation

We aim to evaluate the MSF OCA surveillance response in Freetown by:

- Understanding the perspectives of epidemiologists and other practitioners on the Freetown EVD surveillance between December 2014 – November 2015 and to what extent the original objectives of the intervention were achieved

3. Methodology

This methodology used for this evaluation is qualitative. This research design will enable a deeper description of the surveillance response. In depth participant-led interviews will allow participant's to explain freely how they experienced the Freetown intervention and specifically share perspectives on whether objectives were achieved. A topic guide with prompts will be produced and will be reviewed after each interview to respond to any emerging themes. Given each epidemiologist was employed at differing stages of the outbreak; a flexible, iterative and participatory approach will be taken to explore and understand the environment in which they were working. Interviews will be conducted in English, recorded with the participant's consent, and transcribed verbatim.

In addition, a review of surveillance indicators used during the Ebola outbreak in Freetown is also being undertaken in parallel to this evaluation. The findings of which will be triangulated with the qualitative data as describe in section 3.1.2

3.1. Sample selection

11 participants will be purposively sampled for interview.

Key informant groups are identified as:

i. MSF OCA epidemiologists involved in the Freetown response between December 2014 – November 2015;
ii. MSF-OCA team members involved in the Freetown response between December 2014 – November 2015 : Heath promoter, WatSan, nurse/medical epi assistant;
iii. Coordinators and headquarters staff involved in the Freetown response between December 2014 – November 2015.

These groups were selected to elicit insights from field and HQ level respectively and will further our understanding of decision making processes.

Inclusion criteria

- Employed as an epidemiologist, coordinator or HQ staff involved in MSF OCA's Freetown surveillance response between December 2014 – November 2015

Exclusion criteria

- Do not consent to interview

3.2 Data Analysis

Transcripts will be analysed using an inductive framework approach. This is a rigorous process of familiarisation, identification of a thematic framework, indexing, charting and interpretation. The researcher will become familiarised with the data and then establish a thematic framework onto which the data could be coded. This charting of the data will allow for the coded text to be sorted into recurring themes. In the interpretation phase, associations between the themes will be investigated compared and contrasted and the final interpretation of the data produced. Triangulation of qualitative data with results of the quantitative ranking will test the consistency and allow for cross checking of results.

3.3 Quality Assurance

Quality and rigour is achieved in qualitative research through transparency and reflexivity built in as part of the research process. Triangulation ensures completeness of data, cross-checking and the ability to trace the variety of influences impacting on the study setting. A reference to disconfirm evidence and give explanations for negative cases is also applied as part of the validation. The use of participants with different responsibility to the Ebola response (i.e. field/HQ) enables for a fair sharing of different interest groups.

3.4 Informed Consent

Participants will be given an information sheet outlining the rationale behind the evaluation, objectives and methods. Participants will be made aware that participation is completely voluntary and that they can withdraw from the process at any time without suffering any adverse consequences. If they agree to participate, written consent will be obtained.

3.5 Data management and confidentiality

All identifiable information will removed from the qualitative dataset. Each participant will be given a code so only the researcher can identify which interview corresponds to which participant. All hard copies of data will be securely stored and all computerised information will be password protected. After transcription, all audio files will be destroyed.

4. Limitations/Benefits

4.1. Potential limitations of the evaluation

The qualitative component can only be generalised to the Ebola surveillance response in Freetown

It is possible that the participant may disclose information that has possibly harmful wider programmatic implications. It will be discussed with the participant beforehand that if such information is disclosed, the programme managers may need to be informed and take appropriate action.

The content of the stories may evoke traumatic memories for the participant so sensitive questions will be avoided and access to in house psychosocial support with be ensured as per human resource debriefing service for MSF staff.

To minimise singular interpretation of the data a second researcher will be involved in the data analysis.

In addition, given we are only interviewing MSF staff (past and present) we will lack perspectives from the community on MSF surveillance including quarantine, but this is not the scope of this evaluation.

The main burden to interviewees will be the time taken for the interview. We will communicate with the participants about the time needed for the interview and ensure this is kept to with minimal inconvenience to the participant.

4.2. Potential benefits from the evaluation

This review will improve our understanding of the challenges and achievements in this surveillance response should help to inform how we respond to future outbreaks.

5. Evaluation Plan

5.1 Timeline

This evaluation will be conducted over a 6 week period from December 2015 and January 2016. The report will be finalised in January 2016

5.2 Dissemination plan

A report will be produced and will be fed back to the study participants and key stakeholders in Freetown (MoH, CDC, WHO)

5.3 Budget and resources

The costs for this evaluation fall in existing budgets. The research will be conducted by MSF staff and with ex-volunteer field epidemiologists and so the evaluation will impact on their time but no financial resources are needed.

6. References

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