EVALUATION OF THE OCG RESPONSE TO THE EBOLA OUTBREAK

LESSONS LEARNED FROM THE FREETOWN EBOLA TREATMENT UNIT, SIERRA LEONE

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MANAGED BY THE VIENNA EVALUATION UNIT

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Acknowledgements

“People in Sierra Leone appreciate MSF – they were visual and vocal with a strong message. MSF is seen as the lead organisation, as they were here first. Sierra Leoneans, and the Government, respect this” (NERC).

- All contributors – Thank you for being so generous with your time, insights and information
- Dorian Job, Monica Rull, Mathieu Soupart, Roberta Petrucci - For kindly sending us additional documents
- OCBA Office in Sierra Leone – Thank you for our office space
- Survivors – Thank you for sharing your experiences and insights
- Vienna Evaluation Unit – For your kind support
- To all the MSF staff who have dedicated their work to managing the Ebola crisis, December 2013 to the current day.

The authors of this report benefit from the wisdom of stakeholders’ insights. We hope to have captured the commitment of a group of individuals who have dedicated months and years to support the affected populations of West Africa, individuals from both within and beyond MSF. They are the experts for this report; our task has been to prompt, collate and, in so doing, let their work and experiences form this document. The recommendations are born from their voices.

“From people of Sierra Leone we want to thank MSF. Otherwise, I would not be sitting here. Really nice humanity, ready for anywhere in the world” (Mr ABK, Survivor).

Cover picture: At the Ebola Treatment Centre in Freetown; ©Yann Libessart/MSF

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Executive summary

The evaluation identified the response achievements, culture and event milestones of the MSF-OCG intervention in Sierra Leone during the Ebola crisis.

MSF-OCG commissioned the evaluation; the MSF Vienna Evaluation Unit managed and directed the report. The evaluation focused on the Prince of Wales School Ebola Treatment Centre, Freetown, and its related outreach activities, from December 2014 to end of February 2015. The aim was to assess MSF-OCG’s response, practice and ability to incorporate lessons learned during the ongoing management of the outbreak – the challenges, adaptations and strategy of MSF-OCG’s Ebola crisis response.

The evaluation focused on:
- Infrastructure management (including laboratories)
- Medical & nursing care management
- Epidemiological control measures
- Community engagement & mobilisation
- Capacity building
- Relationship with other actors
- Research

This document captures the experiences and perspectives of 65 key stakeholders and partners:
- **MSF Staff** (MSF-OCG Headquarters staff; MSF-OCG national staff; MSF ex-/field staff, including other OCs)
- **Beneficiaries** (survivors / Ebola Treatment Centre caregivers)
- **Response coordination bodies** (Ministry of Health and Sanitation; Sierra Leone National Ebola Response Centre; Sierra Leone District Ebola Response Centre - Western Area; British military; OCHA; ECHO; DFID)
- **Other actors working with MSF-OCG in the field** (Save, GOAL, KSLP, Welbodi, Handicap International, ADRA)
- **Research partners** (institutions and research board partners; Ebola advisors to WHO)

Interviewees were selected to represent a range of important stakeholders. They candidly offered their scrutiny and experience, allowing the emerging themes to be identified for the evaluation process. The report documents these findings, draws conclusions that are consistent with the collated data, and makes the required recommendations to enable improvements to the practice.

**KEY FINDINGS AND CONCLUSIONS**

The Ebola crisis exposed the strengths and weaknesses of the MSF movement; its structures and its culture. MSF-OCG’s activities evolved over the course of the outbreak, in recognition of the complex dynamics of the response. This report documents the key successful innovations, achievements, delays, and failures of OCG’s response in particular, and how they sit within the overall forces of the MSF movement. It identifies areas for reflection, and makes recommendations for action.

The decision for a single MSF section (OCB) to lead the response needed better legitimisation by the other sections in order to foster improved levels of collaboration and communication. The demands were high on the Centralised OCB Task Force and the findings suggest that there were insufficient formal structures to support their work. Devolving decision-making to other Operational Centres, and down to the field, where possible, increased innovation and adaptation to the dynamics of the crisis.
At the time of Prince of Wales Ebola Treatment Centre (POW ETC), MSF-OCG had gained in confidence and experience with managing Ebola, and evolved operating more or less independently of the Centralised Task Force during this time. The OCG Ebola experts were also over-burdened with decision-making responsibilities by the large number of requests and the lack of more formalised systems of information management. The field-to-HQ decision-making needed to be structured, and where appropriate, field medics needed to be given the authority to make adaptations according to their level of competence and experience.

OCG did encourage a culture of innovation and adaptation from field to HQ levels and this flexibility was necessary in order for the response to keep up with the change dynamics of the outbreak, in an attempt to meet the population needs as they were identified.

All actors welcomed the arrival of OCG in Freetown, but they regretted that MSF had not mobilised its intervention in Freetown earlier in the outbreak. The POW ETC was constructed and opened by OCG rapidly after the decision was made. The visible activities and family visiting facilities helped build trust and minimise tensions with the surrounding community. Importantly, it also provided critical reassurance for the patients and their families.

Patient care at the POW ETC was improved compared to previous ETCs due to the incorporation of lessons learned, such as the innovative layout utilising safe corridors and point of care equipment. Although external laboratory services were weak, MSF-OCG had successfully allocated an available Nigerian mobile lab facility to support the POW ETC, allowing for rapid, reliable diagnostics and enhanced biochemical monitoring, which made improvements to patient care possible. Additionally, survivors taking the role of staff caregivers were considered important for the welfare of patients, especially the young. The Survivors Clinic was pioneered by OCG and everyone considers it to be an important MSF contribution.

OCG offered excellent clinical training sessions and access to the ETC for other actors to observe, but was late in recognising weaknesses and gaps in outreach work. OCG’s intervention could have had more impact if it had been able to initiate community engagement with experienced health promoters faster and to expand its role in epidemiological data collection and contact tracing in Freetown.

After initial tensions, MSF-OCG activities became more trusted by the community. Strategies such as the use of locally recruited outreach staff (able to link with the ‘auntie network’), and the reintegration of survivors, resulted in stronger relationships with the community.

Prioritisation of relationships with key non-MSF stakeholders in the future will be important for improving overall coordination, and should result in increased effectiveness of the crisis response. There was criticism that while MSF was the leader of the tactical implementation, it had excluded itself from strategic leadership and response coordination in Sierra Leone. The role of the Intersectional Liaison and Advocacy Officer supported networking, information sharing among MSF sections and with the other actors in the response community.

Under the coordination of the Centralised Task Force, MSF engaged with operational research relatively late and generally failed to systematically document and collect data using standardised tools and frameworks. By sharing OCG’s data with other researchers, pooled data from different sources will enable all to learn as much as possible about transmission factors and clinical outcomes. New collaborations with research institutions and advisory networks were a positive, progressive feature of this outbreak, which should be developed.

The OCG Geographic Information System (GIS) unit successfully fast-tracked their product to support the overall response of the MSF movement and utilised a secure web portal for easy access to the maps.
An organised information system to share knowledge more broadly, such as a managed web platform, allowing the posting of guidelines and other emerging useful information, would have assisted MSF and other actors in their response.

MSF now has a large reservoir of staff experienced in the management of Ebola (or more generally Viral Haemorrhagic Fever) and other emerging disease outbreaks. The experience of this cohort is yet to be fully captured (through workshops, for example) and their commitment to MSF’s work needs to be nurtured by the Human Resources Department.

OCG must continue to use its strength of versatility. Successes during this outbreak include the implementation of adapted models and approaches to the clinical care of patients. In the future, it is necessary to maintain confidence in response flexibility, ensuring that approaches reflect the geographical location, the cultural context, the scale of the outbreak, evolving transmission dynamics and emerging knowledge.

**KEY RECOMMENDATIONS**

1. Establish the structure and function of a Centralised Task Force for crisis response with all MSF sections before another large-scale response. Consider a MSF section to take the lead in a given country, for major/complex scenarios, to allow for consistent representation with non-MSF stakeholders.
2. Develop decision-making structures and procedures to ensure accountability and efficiency in finalising decisions; this structure should support innovation and delegate decision-making to the field according to staff experience and competence, within specified boundaries.
3. Future interventions should deliver a full outbreak response package encompassing Water, Hygiene and Sanitation (WHS), contact tracing, health and hygiene promotion.
4. Implement standardised effective and efficient tools for epidemiological data collection across MSF teams and allow projections to inform MSF’s strategy.
5. Invest resources in developing capacity in contact tracing for both urban and rural settings to allow OCG to become a leading strategic advisor, or implemener, of the contact tracing processes/mechanism in future outbreaks.
6. Train and guide other actors on ETC set-up and management, community outreach activities focused on health promotion, WHS and contact tracing methods.
7. Contribute to national level strategic coordinating bodies to influence policy decisions, and consider MSF’s regional/global strategic advisory roles in future crises. Invest in developing senior staff’s (field and HQ) skill sets in global health leadership, strategic planning and diplomacy.
8. Recruit ‘information management’ personnel (field, HQ and Task Force levels) to identify, collate and share data within and outside of MSF to foster informed decision-making and enhance daily improvements to activities.
9. Develop an OCG Research Board for ethics, protocol advice and research prioritisation. This should include – and formalise existing – research institute partnerships (inside and outside of MSF, such as DNDi, LUXOR, LSHTM, Swiss Tropical and Public Health Institute).
10. Integrate operational research from the beginning of future outbreak interventions.

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1 This is a selection from the full list of recommendations, Chapter 4.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ADRA</td>
<td>Adventist Development and Relief Agency</td>
</tr>
<tr>
<td>AST</td>
<td>Aspartat-aminotransferase</td>
</tr>
<tr>
<td>CDC</td>
<td>U.S. Centre for Disease Control</td>
</tr>
<tr>
<td>CK</td>
<td>Creatine Kinase</td>
</tr>
<tr>
<td>DERC</td>
<td>Sierra Leone District Ebola Response Centre</td>
</tr>
<tr>
<td>DFID</td>
<td>UK Department of International Development</td>
</tr>
<tr>
<td>ETC (or ETU)</td>
<td>Ebola Treatment Centre; Ebola Treatment Unit</td>
</tr>
<tr>
<td>EVD</td>
<td>Ebola Viral Disease</td>
</tr>
<tr>
<td>GoSL</td>
<td>Government of Sierra Leone</td>
</tr>
<tr>
<td>HI</td>
<td>Handicap International</td>
</tr>
<tr>
<td>HoM</td>
<td>Head of Mission</td>
</tr>
<tr>
<td>HP, HPs</td>
<td>Health Promotion, Health Promoters</td>
</tr>
<tr>
<td>ICU</td>
<td>Intensive Care Unit</td>
</tr>
<tr>
<td>IFRC</td>
<td>International Federation of the Red Cross</td>
</tr>
<tr>
<td>KSLP</td>
<td>Kings Sierra Leone Partnership</td>
</tr>
<tr>
<td>LSHTM</td>
<td>London School of Hygiene and Tropical Medicine</td>
</tr>
<tr>
<td>MH</td>
<td>Mental Health</td>
</tr>
<tr>
<td>MoH&amp;S (or MoH)</td>
<td>Sierra Leone Ministry of Health &amp; Sanitation</td>
</tr>
<tr>
<td>MSF</td>
<td>Médecins Sans Frontières</td>
</tr>
<tr>
<td>NERC</td>
<td>Sierra Leone National Ebola Response Centre</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
</tr>
<tr>
<td>NS</td>
<td>National Staff</td>
</tr>
<tr>
<td>OCs</td>
<td>Operational Centres (the MSF Section Offices/Teams)</td>
</tr>
<tr>
<td>OCA</td>
<td>MSF Operational Centre Amsterdam</td>
</tr>
<tr>
<td>OCB</td>
<td>MSF Operational Centre Brussels</td>
</tr>
<tr>
<td>OCBA</td>
<td>MSF Operational Centre Barcelona/Athens</td>
</tr>
<tr>
<td>OCG</td>
<td>MSF Operational Centre Geneva</td>
</tr>
<tr>
<td>OCP</td>
<td>MSF Operational Centre Paris</td>
</tr>
<tr>
<td>POW ETC</td>
<td>Prince of Wales School, Ebola Treatment Centre – OCG</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>‘Save’</td>
<td>Save the Children Foundation</td>
</tr>
<tr>
<td>VHF</td>
<td>Viral Haemorrhagic Fever</td>
</tr>
<tr>
<td>WatSan</td>
<td>Water/Sanitation</td>
</tr>
<tr>
<td>WHS</td>
<td>Water, Hygiene and Sanitation</td>
</tr>
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</table>
1 Introduction

1.1 Background

On 22 March 2014, an Ebola epidemic was officially declared in Guinea. In the course of the next year, the virus infected more than 25,000 people in nine countries and claimed more than 11,000 lives, dwarfing all previous Ebola outbreaks. For comparison, the largest previous outbreak had a total of 425 cases.

Three of the countries have suffered major epidemics: Guinea, Liberia and Sierra Leone.

OCG first initiated the response in Guéckédou, Guinea, and handed over the operational management to OCB as the section traditionally leading Viral Haemorrhagic Fever (VHF) response. OCG and OCB jointly responded to the crisis from the onset, joined later by OCA and OCBA. OCP subsequently joined the intervention with a focus more on non-Ebola related diseases (access to healthcare and malaria prevention).

In Freetown, Sierra Leone, OCG managed a 100-bed Ebola Treatment Centre (ETC) from December 2014 until end of February 2015. The centre served as a capacity gap filler in the capital, while other organisation's centres to become operational.

AIM OF THE EVALUATION

This evaluation aims to assess OCG’s response and practice in the Freetown ETC from December 2014 until end of February 2015. Specifically, it intends to reflect on MSF’s ability to incorporate lessons learned during the ongoing management of an outbreak.

Specifically, we will consider the following areas:

- Infrastructure Management (including laboratories)
- Medical & Nursing Care Management
- Epidemiological Control Measures
- Community Engagement & Mobilisation
- Capacity Building
- Relationship with other Actors
- Research

IMPORTANCE OF THE EVALUATION

The findings of this evaluation will be valuable in preparation for the next VHF outbreak, epidemic or other (re-)emerging infectious disease scenario. In addition, the recommendations may be used to elaborate ‘outbreak response’ and ‘Ebola response’ guidelines.

Importantly, the evaluation explores the rigid vs flexible culture of the OCG response, informing MSF-OCG about its ability to incorporate developments in the midst of a crisis. Thus, the recommendations will serve OCG beyond the outbreak scenario.
1.2 Time line – key background and documentation

Baseline knowledge on the management of Ebola

Below is a list of some of the VHF/Ebola guidelines available at the start of, and during, the outbreak.

   This is an early publicly available guideline. Components of this guideline can be seen in the much more comprehensive MSF guide from 2007.

   This comprehensive manual may be a useful reference in re-formulating new guidelines. The manual offers advice on coordination with other actors and the community, discussing before planning action, and has two training module outlines in the annex. This document attempts to incorporate, in detail, all activities for all departments for the ‘start’ of an intervention.

➢ Filovirus Haemorrhagic Fever Guideline 2008 (Esther Sterk. MSF. 2008)
   This guideline offers a useful summary of the 2007 Guidance Manual and incorporates additional knowledge and lessons learned from outbreak interventions. It does not intend to replace the full Guidance Manual for those deploying to manage an outbreak.

➢ Draft New Guideline Filovirus Haemorrhagic Fevers – 18 April 2014 (MSF. No credits)

   This guide is limited to clinical guidelines. The MSF 2008 Guidelines were used in combination with this guide, as the MSF document offers guidance on the broader outbreak response activities.

Key milestones – Ebola outbreak Sierra Leone and OCG

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>26/05/14</td>
<td>1\textsuperscript{st} confirmed case of Ebola Virus Disease (EVD) in Sierra Leone (from a ‘government hospital’ in Kailahun district – bordering with Guinea)\textsuperscript{6}</td>
</tr>
<tr>
<td>June 2014</td>
<td>1\textsuperscript{st} case EVD reported in Freetown (WHO data), no facilities present at that time.\textsuperscript{7}</td>
</tr>
<tr>
<td>6/8/2014</td>
<td>National state of emergency declared in Sierra Leone\textsuperscript{6}</td>
</tr>
<tr>
<td>1/9/2014</td>
<td>September 2014 – significant surge in cases in Freetown, along with Port Loko, Bombali and Tonkolili districts. “…MoH was working nearly alone…”\textsuperscript{9}</td>
</tr>
<tr>
<td>30/11/14</td>
<td>Bo ETC handed over from OCB to OCA\textsuperscript{10}</td>
</tr>
<tr>
<td>10/12/2014</td>
<td>POW ETC with 40 beds (two wards) available\textsuperscript{11}</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>17/12/14</td>
<td>“Government process of case ‘surge’” began</td>
</tr>
<tr>
<td>10/1/2015</td>
<td>Freetown POW ETC (100 beds – 30 for suspected cases and 70 for confirmed) declared “totally operational”</td>
</tr>
<tr>
<td>3/02/2015</td>
<td>Survivors Clinic was opened in Freetown by OCG</td>
</tr>
<tr>
<td>16/02/2015</td>
<td>Decision to close the POW ETC was finalised</td>
</tr>
<tr>
<td>23/02/2015</td>
<td>Last POW ETC patient, the 83rd survivor, was discharged</td>
</tr>
<tr>
<td>28/02/2015</td>
<td>Freetown POW ETC closed. Focus continued on Survivors Clinic, Water, Hygiene and Sanitation (WSH), and HP</td>
</tr>
<tr>
<td>1/3/2015</td>
<td>The Survivors Clinic moved from tent to a building on the school compound. OCG had their office, and the clinic was in the basement – (from a key interview)</td>
</tr>
<tr>
<td>8/5/2015</td>
<td>OCG decides to close mission in 6 weeks</td>
</tr>
<tr>
<td>15/06/2015</td>
<td>OCG activities stopped. Survivors Clinic handed over to OCB and moved off the school compound – (from a key interview)</td>
</tr>
<tr>
<td>30/06/2015</td>
<td>OCG closes mission – “By the end of June 2015 the mission closes after a seven month intervention in the Country”</td>
</tr>
<tr>
<td>07/11/2015</td>
<td>Sierra Leone announced Ebola-free by WHO (BBC World Service)</td>
</tr>
</tbody>
</table>

### 1.3 Methodology

We used an ex-post evaluation approach to analyse aspects of the management of the Ebola outbreak at the Freetown ETU, ran by MSF-OCG (using qualitative methods). The evaluation process consisted of distinct phases:

- Collation and review of relevant documents supplied by the MSF Vienna Evaluation Unit and OCG, and those available in the public domain.
  - OCG data sources primarily included, but were not limited to: SitReps, visit reports, *End of Mission* reports, Ops meeting minutes, reports from strategic meetings and workshops, clinical guidelines; reviews of health promotion, water, hygiene and sanitation activities.
- Document analysis of key papers for information and themes specific to the evaluation objectives.
- Semi-structured interviews were conducted in the period of 22 October to 23 November 2015 with key informants, purposefully sampled by OCG commissioners, the MSF Vienna Evaluation Unit and the evaluators according to roles mapped to the scope of the evaluation.
  - The 65 individuals consulted included:
    - Key stakeholders at Geneva HQ.
    - Key informants in Sierra Leone
      - Ministry of Health & Sanitation, Sierra Leone National Ebola Response Centre (NERC), international NGOs, MSF-OCG, OCA, OCB and OCBA national and international staff (current and past), survivors.
    - Other key informants by Skype interview (worldwide) and in person (London).
- Typing of interview notes and cross-checking between evaluators.
- Thematic analysis of (principally) typed interview notes to address the evaluation aim, mapped to scope areas; triangulation performed between interviewees’ perspectives and findings from documentary analysis, wherever possible.
- Writing up findings, conclusions and formulation of recommendations.

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2 Please refer to the annex for the full list of interviewees.
1.4 Limitations

We conducted an ex-post evaluation, meaning that we examined information and actions from a specified, completed period in time. There are the inherent limitations of recall bias, data loss and access to some informants.

Other MSF OCs remain present and active in Sierra Leone; while we ensured that our informants were aware that our focus was framed within the specified period for MSF-OCG’s work, other NGO actors, the NERC and the Ministry of Health and Sanitation (MoH) often wanted to respond about their experience of the MSF movement’s response in general. We have captured this within the report, where relevant.

Not all information captured in the interviews could be triangulated with other resources or interviewees, but we largely found consistency. The principal themes for each scope area were strong, and we reached thematic saturation on many issues. We have provided quotations where comments were particularly relevant in capturing key issues. As the interviews were not transcribed, we have relied on our joint note taking during the interviews, and digital recordings, to ensure that these are as accurate as possible, but they may not be verbatim.

This evaluation has been conducted within a limited time frame. We interviewed more individuals than was initially planned, each providing breadth and depth to this work. Interviewees were generous with their time and responses, resulting in a large amount of interview data to be analysed. While we had organised the interviews to ensure coverage of all the scope areas, some areas elicited more emerging themes than others, which in turn prompted deeper examination.

There was a lack of formal documentation of decisions and organised data collation conducted during the outbreak. This limited our ability to analyse the impact of field activities and adaptations on patient outcomes, and represents an area of weakness in the OCG response for which we suggest recommendations for improvement.
2 Findings and conclusions

Each of the following sub-chapters contains respective findings and conclusions. Recommendations are presented at the end of the report.

- Infrastructure
- Medical & Nursing Care Management
- Epidemiological Control Measures
- Community Engagement & Mobilisation
- Capacity Building
- Relationship with other Actors
- Research, Monitoring and Evaluation

2.1.1 Infrastructure

“MSF are always ready – they have everything you can think of – they are excellent!... They say – ‘wait a minute’ – and then they have it!” (OCG national staff).

Infrastructure in the context of this evaluation encompasses more than physical structures, reflecting the themes, which emerged during the evaluation process. It includes an analysis of the response infrastructure at the arrival of OCG in Freetown, the MSF crisis management structure, the OCG-specific crisis management structure, infrastructure innovations of the POW ETC, alternative intervention models for the future and laboratories.

2.1.2 Findings

RESPONSE INFRASTRUCTURE AT THE ARRIVAL OF OCG IN FREETOWN

“MSF were doing a great job in Bo and the Eastern Region, but we needed MSF in Freetown two months earlier” (DERC/NERC).

MSF’s decision to intervene in Freetown was late. By September 2014, there was a shortfall of isolation beds in Freetown and the whole Western Area. There were severe bottlenecks for patients in Holding Centres and patients were dying of Ebola while under quarantine in their homes. The ‘117’ hotline was unable to send ambulances as there were no beds available. This crisis situation continued for months; MSF-OCG sent an assessment team in November 2014. There was regret within OCG that they had not come to Freetown at least four weeks earlier.

The government had initially planned that the Western Area (which includes Freetown) would have isolation facilities provided by the Ministry of Health and British organisations (including the Save the Children ETC, supported by the UK Department of International Development [DFID] and the British military). However, actors tasked to build the new ETCs were not able to increase the speed up delivery to meet the high demand for isolation beds. OCG Operations explained that the opening of a MSF activity in Freetown had been discussed with OCB and the subsequent Centralised Task Force in the months from June to September. There were delays to decision-making due to “... a lack of strategy within MSF... and internal debates with other sections”, in part due to concerns that MSF did not have the HR capacity. However, interviewees confirmed that all MSF sections ultimately agreed with OCG opening an ETC in Freetown.

The Sierra Leonean government asked OCG to set up an ETC in Freetown, and in November 2014 the Ministry of Health assisted the OCG assessment team in identifying the location and gaining community approval for the site at the ‘Prince of Wales School’ (POW). The Memorandum of Understanding (MoU) with the government, signed on the 24th of November, included the exit
strategy: "Once the ETC is no longer needed (epidemic decreasing or sufficient beds available in permanent centres) MSF-OCG will remove the ETC and return the premises to the school authorities..."³

Once OCG decided to intervene, they acted rapidly. The OCG ETC was built in the school compound in 12 days, admitting its first patient on the 6th of December 2014. All actors were impressed with the efficiency with which the POW ETC was designed, constructed and open to admit patients. The achievement demonstrated MSF’s crisis experience and effectiveness, and OCG’s dedication in the field and at HQ. By the 18th of December 2014, the number of beds available in the Western Region met patient demand for the first time since September 2014.

The OCG project priorities were described as 1) provide beds for isolation and treatment of cases of Ebola, and 2) provide outreach services. There was a reduction in the number of Ebola cases in Freetown in the first week of January 2015. The admission rate at the POW ETC had fallen to about half its previous rate in the third week of January. While these secular changes were happening in Freetown, OCG had also increased its outreach activities (health promotion and community engagement) locally to the POW, and introduced support services for survivors and their families. The impact of these outreach activities on transmission rates in the local community cannot be assessed retrospectively, but may have supported the virtuous circle of reduced transmission and fewer cases. Survivors greatly appreciated the services of the Survivors Clinic when it opened in the first week of February.

The ETC was intended as a ‘stop-gap’, with the school to be handed back by the end of February 2015. The government of Sierra Leone decided to re-open schools in March/April 2015. The ETC closed at the end of February, which was followed by decommissioning of the site, delaying the POW school re-opening by one week behind other local schools.

OCG continued to run the Survivors Clinic, with all complimentary services (medical, mental health, psycho-social support, and health promotion) until the end of June 2015. The decision that OCB would take over the Survivors Clinic from OCG was made during the Ebola Workshop meeting in Dakar (11-13 June 2015).

**The MSF crisis management structure**

"The Centralised Task Force approach was not agreed with other sections at the start – in not sharing the vision, Sectional Leads were not all on the same page" (OCG HQ staff).

The Centralised Task Force, formed by OCB, led MSF’s regional Ebola response. Interviewees identified challenges related to this structure, which included concerns that the style of management was not always well accepted by other MSF OCs. Undoubtedly, those within the Centralised Task Force carried unprecedented responsibilities related to the clinical challenges, and the requirement for negotiation, advocacy and careful decision-making.

In the early phases of the crisis, all decisions required validation from the Centralised Task Force. The Task Force was described as being conservative and slow, largely because it was overwhelmed with requests: “Decisions that should have taken an hour took many days” (OCG HQ). Individuals reported that their proposals for new approaches were rejected due to a lack of sufficient evidence: “The Centralised Task Force was like a blockade – there was lack of trust” (OCG HQ). However, all involved

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³ The agreement included a donation of a generator to the POW school, but the removal of electrical infrastructure made the generator “useless” and unfortunately created tensions between the POW school administration and MSF-OCG, according to national staff.
recognise the challenges faced by the Task Force in balancing the risks under these difficult circumstances.

Some interviewees supported the notion of a single lead section during major crises and/or complex multi-sectional responses. MSF used analogies to this model in Afghanistan and in Northern Sudan. “There was an old agreement in the movement that OCB were to lead on VHF. A single OC lead could have functioned better but because of lack of people with Ebola expertise and other low capacities, it was impossible” (OCG Operations). Eventually, all five sections took a role in the response, with some OCs choosing to focus on non-Ebola interventions.

In Sierra Leone, in addition to OCG working at the POW ETC in Freetown:

- OCB had ETCs in the northeast of the country, but handed these over to OCA in October and November 2014 in order to concentrate on the Guinea response.
- OCBA provided mass distribution of anti-malarial medication before opening an ETC for maternity patients with Ebola. Although it was an important clinical service for the Western Area, it was also late (opened in Jan 2015, closed April 2015) and the demand was low during that period.

Early in the outbreak, the perception in Sierra Leone was as MSF as one actor. Later people began to distinguish between different MSF sections. When the government asked OCB to re-open the Bo ETC and have staff available in case of reoccurrences of cases, the decision from OCB and OCBA was that it was not an appropriate use of resources. The government then approached OCA who agreed to the request, causing frustration between sections about the lack of consistency in operational planning. We were told that this decision resulted in 130 staff being ‘stand-by’ in February and March 2015.

The MSF movement struggled with HR capacity with regard to numbers, experience and competency in managing this crisis. In spite if this, individual MSF staff were considered to have a sustained presence in the field – MSF-OCG was “consistent compared to other organisations” (Welbodi Partnership). From a HR perspective, there were too few individuals with sufficient Ebola experience both in the field and in HQ. Overall, interviewees felt that good management and leadership skills were ‘lacking’ in the field, with some named exceptions that were ‘excellent’.

Despite the challenges, the MSF movement earned a good reputation with key stakeholders: “MSF always knew what they were doing – why and what they will deliver. Recruitment by MSF is good” (NERC).

The MSF movement benefits from having the diverse dynamics of the different Operational Centres. It enables the MSF movement to have competing approaches to a problem and still maintain their core mandate. In a crisis, the strengths of this model must be allowed to flourish.

**THE OCG CRISIS MANAGEMENT STRUCTURE**

“OCG managed decently under the constraints” (OCG staff)

The hierarchical decision-making structures within OCG were well defined. OCG Ebola expert decisions were validated transversally between directors. If a specific technical issue arose that was departmentally specific, the director of that department would make the decision. It is possible that a lack of a specific Ebola crisis management cell to consolidate the OCG HQ operational teams in one place, combined with the frequent field deployments of the Ebola experts, may have contributed to the slowing down of communication related to protocol questions, changes and validation of proposals. The demands on the OCG Ebola expert staff were considerable and warrants formal acknowledgement. It has been suggested that a medical Head of Mission (HoM) would be advantageous; however, an experienced medical coordinator could give this type of support to a
non-medical HoM. The mission’s medical responsible, whether it is the Medco or the HoM, needs to have the experiential weight to network and influence at all levels.

There was appreciation from the field for the hands-on support HQ offered. However, individuals would like more transparency about visits. For example, a Terms of Reference regarding a visit could be sent in advance to ensure roles and schedules are clear to all parties – those travelling, and those receiving the visit.

Staff described tensions between the field staff and HQ with regard to the closure of the OCG intervention, and more generally the lack of flexibility or engagement on this issue. Furthermore, an initial lack of commitment from OCG HQ delayed the planning of the Survivors Clinic, which was a field-driven initiative. This clinic finally opened three weeks before the POW ETC was closed and was continued by OCG until June 2015, when it was handed over to OCB.

**Infrastructure innovations of the POW ETC**

The growing independence of OCG from the Centralised Task Force over the period of the outbreak resulted in the implementation of more innovative adaptations, with “much more involvement from both sides – HQ and field” (OCG HQ staff).

The POW ETC design benefited from lessons learned through the response with the “luxury of being pre-design from the ground up” (OCG HQ staff). Prior to the POW ETC, other NGO actors had taken their ETC design from Bo, which was constructed under different circumstances and had many limitations.

The ETC was innovative. Key infrastructure innovations of the POW ETC were:

- The physical design and layout, enabling staff to access patients from the low-risk area without entering the high-risk area.
- Nursing staff were located closer to the patients, allowing staff to respond quickly.
- The use of plexiglass in the high-risk area allowing
  - more frequent direct observation by doctors of patients and colleagues within the ward, enabling those outside the ward to give support to colleagues inside, and reducing the number of staff required;
  - patients’ relatives to safely interact with their family member(s) as they were facilitated to enter into the ETC high-risk area, protected by the plexi barrier, when the patient was too unwell to go to the designated visiting area;
  - to reduce the amount of time medics spent in hot PPE.
- Low fencing within the low-risk area, creating a two-meter safe-distance zone between staff and patients. This improved the interaction and quality of care possible with patients – staff in the corridor could use a lighter version of personal protective equipment (PPE), while also being able to access the plexiglass corridor.
- The ‘safe’ corridors allowed nursing stations to be positioned with a constant view into the wards.

The design process of the POW ETC was completed at OCG HQ with the input from staff in the field; there were eight draft designs accomplished within four working days. While the design progressed, the logistics team prepared the ground for the tent structures. Even the orientation was considered, allowing the sea air to blow through the Centre to make it more comfortable in the heat.

The physical design improved the experience for staff, patients and their families. The combination of design and increased HR capacity allowed the ETC activities to be more transparent to the patients’ relatives. Innovations included safe visiting areas with counselling for family and friends and the provision of separate benches for patients and visitors to show films on a screen in the evenings. These factors made the POW ETC accessible and ‘welcoming’ for families and friends of patients. “The POW was the best ETC in the country – it was really great” (OCG field staff).
The POW layout was based on a mass casualty principle. The theory was that 40% of the patients who were triaged as having better survival prospects would be located in the Intensive Care Unit (ICU) areas where the ETC technical staff were concentrated. The remaining 60% would be managed to allow a decrease in the ratio of medical staff to patients. The nursing station, with a 2-metre separation barrier, requiring fewer staff, would oversee suspected cases. Survivors would manage recovering patients, with fewer medical staff required. If the number of patients increased, the ETC could keep the same ratio of medical staff to patients in the ICU while in the suspected cases and recovery areas, the number of medical staff could be decreased.\(^{4}\)

Some interviewees were concerned that while having advantages for the medical teams and improved patient supervision, the design innovation had the unintended consequence of

a. disincentivising medical staff from entering the high-risk patient cubicles. As a result, additional tasks fell to the WatSan staff – who were required to enter the cubicles more often for cleaning – such as giving oral rehydration to patients and doing other basic care of patients, which would not usually be considered their role.

b. detrimentally reducing the space inside the cubicle which made the WHS work more difficult. For example, a nurse had tripped over a stretcher due the restricted space in which to operate.

Adaptations to operations matched the dynamic evolution of the outbreak. Examples include:

- The Centre was downsized as demand for isolation/treatment beds decreased.
- Changes were made to medical protocols as knowledge developed.
- Survivors were employed as care-giving staff (requiring lighter, more comfortable PPE), further reducing the staff-to-patient ratio. This was felt to be particularly important for the welfare of young patients.
- The closure plan of the ETC was developed in conjunction with community engagement activities.

Those interviewed felt that the POW was MSF’s flagship ETC.

**ALTERNATIVE INTERVENTION MODELS FOR THE FUTURE**

“The model needs to be flexible to the needs, demands and context of the outbreak” (OCG HQ staff).

Some interviewees felt that community care centres (CCCs) could be preferable to ETCs. These are smaller Ebola treatment facilities, varying in size from five to thirty beds, which are closer to the community and developed with community engagement and facilitation, often with a family member being the main caregiver for the patient. This model is intended to mitigate the fears associated with loved ones being ‘removed’ to ETCs and offers a focal point for community awareness activities. Some work had been done to develop a smaller simplified model in September 2014 (see Annex 5.5). This concept was used in the transit centre of an ETC in Monrovia and also in the POW suspected cases area.

Formalisation of a home-based care model was discussed out of pragmatism at the peak of the outbreak when there was a lack of available treatment beds. This model addresses the reality of the situation, which could be found throughout the outbreak with family members either preferring to care for their infected loved ones at home, or having no alternative, sometimes while under quarantine. Families would receive information and material resources (PPE) to allow them to protect themselves from transmission of the virus while nursing their family members. “Initially it

\(^{4}\) This information was provided by a senior OCG HQ staff.
was difficult to think outside the ETC set-up. Large ETCs need large resources and are more complex to deliver” (OCG HQ staff), thus the dynamics of an outbreak requires flexibility in supporting patient care.

Several interviewees valued the future consideration of small, local care solutions as alternatives to the ETC, yet the models above remain controversial and largely untested. CCC models in Liberia were intended to be evaluated by Save, but there were too few patients in the centres so there were no meaningful conclusions. In the height of the outbreak, epidemiological modelling (by Adam Kucharski at LSHTM) suggested that the use of quickly scaled up CCCs would have reduced community transmission overall, outweighing the modest increase of transmission associated with the CCC model.21

A mass casualty “Ebola Regulated Referral System” approach was proposed within OCG in October 2014. This model should be considered for large-scale infectious disease outbreaks, and it should be considered for adaptation in other crises contexts. Please refer to the Annex for a full description of this model.

The need for flexibility in approach is paramount; there is no one perfect solution. Further, “MSF should be more able to go outside the norm” (OCG Operations). The specific location, cultural context, scale of outbreak and transmission dynamics of a future outbreak would determine the most suitable response models – more than one approach may be required. The dynamics of any outbreak would require real-time review and projection in order to inform response adjustments. There was an overall lack of projection, planning and flexibility in response by all actors in this Ebola outbreak.

LABORATORIES

“The laboratories in Sierra Leone were chaotic” (OCG HQ staff).

Laboratory diagnostics were slow and unreliable at the peak of the outbreak in Sierra Leone. This created bottlenecks in Holding Centres, resulting in them being described as ‘Ebola Transmission Centres’.

OCG acquired an on-site laboratory, the European/Nigerian mobile lab, at the POW. This lab processed the entire ETC samples from the second day of the POW’s opening, providing rapid diagnoses for patients. The ‘mobile lab’ brought its own materials and equipment, operating independently of MSF. Additional biochemistry equipment was provided by MSF to improve its investigative capacity (the i-STAT and Piccolo). This laboratory service was a success.

However, it is relevant to note that Laurent Kaiser, deployed to the affected countries from the Hôpitaux Universitaires de Genève (HUG), wrote in his report for OCG: “For the future I would strongly advise a group of technicians/biologists trained in molecular diagnostics that could set up this type of lab, including haematology and chemistry. A training centre might be considered as a joint project between MSF and our institution (Laurent Kaiser, HUG).”22

Although this recommendation was not taken up in time for the POW ETC, MSF-OCG may consider expanding its own capabilities through such training, and thus increase independence for future outbreaks.

2.1.3 Conclusions

There were two aspects of timeliness to consider:

● An earlier intervention of MSF in Freetown would have been beneficial. Constraints related to capacity and internal strategic disagreement delayed the decision for an MSF presence in Freetown. It is possible that an earlier arrival may not have been able to be suitably staffed,
but there is regret from all actors, especially OCG staff, that the POW facility and the associated outreach activities were not available earlier.

- The speed of OCG’s delivery, once committed to the ETC, appears to be unparalleled. The great effort was appreciated and embedded MSF’s reputation as being the experts in this field of work.

The MSF crisis management structures employed in this outbreak had their strengths and weaknesses. The intensity and complexity of demands on the Centralised Task Force were significant but despite the challenges, MSF (and OCG specifically) maintained an excellent reputation in its response in Sierra Leone.

- When one section leads a major response, other OCs could have pre-established participatory roles (such as foci of specialty), within a management system that is coherent, clear and acceptable to all.
- The Centralised Task Force was responsible for both broad and detailed decisions, which impacted its decision-making ability. The demands were intensive and sustained over months.
- MSF suffered from a lack of staff with sufficient skills, e.g. in clinical knowledge, networking, negotiation, advocacy and coordination – activities which were vital in this multi-actor, rapidly evolving crisis.
- Collaboration across OC missions in the field was considered successful.

In terms of the OCG crisis management structure:

- Working arrangements across MSF-OCG, from field to HQ, were mostly productive.
- A dedicated Ebola crisis management cell, consolidating the OCG HQ operational teams in one place, might have offered a more supportive and organised platform for the OCG Ebola experts and would have facilitated decision-making.
- Information about the purpose of MSF HQ visits is helpful for the field staff.
- MSF-OCG may have benefited from sharing more decision-making responsibilities with senior field staff. The decentralisation of decision-making to OCG field/HQ, when it occurred, was advantageous to innovation.

There were important innovations at the POW ETC that addressed previously identified challenges:

- The plexiglass corridor allowed improved supervision of patients and enabled their contact with the relatives.
- Visitor-friendly construction and provision of social events for patients’ relatives had a positive impact on the acceptance of care.

Other important conclusions drawn were:

- Suggestions and ideas were driven from both the field and HQ.
- The OCG POW model was considered a significant improvement on previous ETC’s. Aspects of the design and relevant operations may be built into guidelines for future infectious disease outbreaks, with a view that further innovations should be developed to address recognised challenges.

MSF-OCG, as it is currently led, appears to encourage a culture of innovation and adaptation from field to HQ levels. Flexibility in models of response and intervention are needed in order to evolve with the specific context and dynamics of any future outbreak.

- Local-level care systems may warrant consideration in order to increase triage, isolation and treatment capacity more rapidly (in both large and small-scale outbreaks). Controversies still exist and conclusive analyses have not resolved the concerns.
The "mass casualty" approach may offer an alternative model to large-scale outbreak management. Flexibility in approach needs to be purposefully pursued in future outbreaks. The successful adaptation will be a function of the specific location, cultural context, scale of the outbreak and transmission dynamics.

External laboratory services were weak and chaotic. MSF-OCG imported a mobile facility to support the POW ETC, allowing for rapid, reliable diagnostics and enhanced biochemical monitoring.

- MSF may want to further develop its own VHF/Ebola laboratory capabilities (e.g. in partnership with the Hôpitaux Universitaires de Genève).
- Alternatively, due to the success of the European/Nigerian mobile lab at the POW ETC, MSF may prefer to identify reliable partners for future worldwide deployment in advance.

### 2.2 Medical and Nursing care management

“When told (about my diagnosis of Ebola), MSF was peaceful. Calm. They were understandable. They try to give me the courage. So nice to me about it all” (Survivor).

This section includes an analysis of the use of clinical VHF guidelines, the OCG validation process, patient care innovations of the POW ETC, issues related to balancing staff safety with progressive patient care and the care of survivors. These were the key emerging themes concerning medical and nursing care management.

#### 2.2.1 Findings

**Clinical guidelines and knowledge evolution**

“When the heavy focus on protocols made sense with small numbers of patients (in previous outbreaks), but the strict rules made it impossible to ramp up to meet the demands of treating much larger numbers of patients” (OCG HQ staff).

MSF had a relatively comprehensive Guidance Manual (2007) that includes almost all aspects of an intervention, including community outreach, health promotion (HP), mental health actions, examples of trainings and so on. The 2008 MSF Guideline updates key information from the larger 2007 report of 296 pages and offers a shorter guide of 134 pages. It has important updates but it was not intended to replace the 2007 guide. However, the OCG team referred to the summarised 2008 Guidelines as the version primarily used by OCG during this intervention, rather than to the 2007 Guidance Manual.

MSF produced new draft guidelines between April and December 2014. This appears to be an edit of both the 2007 and 2008 guides, with the incorporation of new knowledge. While very complete and advanced in collating the latest knowledge, these were considered by some to be too complicated and unrealistic when it came to field implementation in an emergency context.

The WHO guidelines adapted for this West Africa outbreak were being produced in Guinea in April 2014 (in French), focusing only on clinical guidance, with an updated version (the WHO Pocket Clinical Guidelines) completed in October 2014. The WHO guideline is purely for the clinical

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5 MSF staff often used the terms ‘guidelines’ and ‘protocols’ interchangeably. However, some staff tended to use ‘guidelines’ to refer to the published/MSF guideline documents, and ‘protocols’ in referring to the adaptations made to standard procedures.
management of patients. It drew heavily from the MSF guidelines, was consistent with them, but did not include other relevant guidance as for outreach activities, WHS management and so on. The Sierra Leone MoH&S Lead for the Clinical Pillar invited MSF (prior to OCG’s arrival) to contribute their expertise to the development of the WHO clinical guidelines, but MSF chose at that time to not engage – a view confirmed by other NGO actors who did collaborate on the guidelines. The WHO’s Pocket Clinical Guidelines were available and used by MSF-OCG staff at the POW ETC “when the MSF guidelines fell short” (OCG HQ Staff).

The MSF Paediatric Clinical Guidelines produced in January 2015 were adapted from earlier versions, with key changes to the use of antibiotics and rehydration, based on expert consensus (recognised evidence was limited): “MSF intends to harmonise paediatric with adult clinical guidelines” (OCG paediatric specialist). MSF is involved in the ongoing WHO Task Force for paediatric guidelines.

In summary, all versions of the MSF guidelines had their limitations. The case management protocols in the 2008 VHF Guidelines were considered ‘vague’ and, while the Paediatric Ebola Guidelines were felt to be a big improvement, they were described as being “too symptom-focused.” Some staff concluded that “the MSF guidelines were obsolete” (OCG HQ). OCG staff confirmed that they were awaiting further emerging evidence, research validation and publication before further updating the MSF guidelines.

**THE OCG VALIDATION PROCESS**

“The POW staff were more alert and changes were more efficient – but you can’t measure this” (HQ staff).

OCG HQ staff commented that many adaptations to patient care emanated from the field. OCG had discussed opportunities to safely encourage clinical innovation: “... teams need to be given responsibility to address changing needs/innovate within defined boundaries; likewise, it must be clear when a decision is not for the field team to take” (OCG Ebola workshop, Geneva. Feb 2015). During the operational period of the POW ETC, there were updates to paediatrics, the care of pregnant mothers and nutrition guidelines.

There was consensus for the validation process for new medical equipment and protocol developments. The HQ medical director then validated requests agreed by the medical Ebola experts. The medical focal point in the field would at times find it challenging to have a productive discussion with the HQ expert, which “created frustration” in the field (HQ field staff). More formalised decision-making processes could have prevented these difficulties, such as ‘decision conversations’ between the field and HQ every three days, as opposed to ad hoc communications.

By January 2015, key medical staff sent to the POW ETC were briefed to be more progressive about case management. These staff were legitimated to take clinical decisions autonomously. Major adaptations to clinical guidelines were still validated by HQ.

Opportunities to progress the validation of treatments may have been missed: “MSF could have been quicker in using some promising treatments and taking some risks with untested drugs. Leaving aside experimental treatments, there were a number of off-label drugs that could have been used even though their effectiveness for Ebola was not clear” (OCG Ebola Workshop. Geneva. Feb 2015).

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6 Refer to the MSF ‘Draft New Guidelines 2014’, which has 23 topic chapters.

7 The decision process was based on: expertise of staff in the field and case-by-case approach; Availability of lab results; Discussion on protocols used by colleagues from the ETC managed by the Emergency NGO. This process clinically led to: Systematic and aggressive use of IV fluids; Management of specific clinical conditions (rhabdomyolysis, renal failure and septic shock). These innovations were captured in a meeting end of February 2015 (Garcia Guerrero, A. (et al). Clinical Lessons learned and Management Recommendations for Patients with Ebola Virus Disease. MSF. February 2015)
PATIENT CARE INNOVATIONS OF THE POW ETC

"[The POW ETC] was innovative...it incorporated clinical care improvements, such as intravenous fluid administration, electrolyte and biochemistry monitoring” (OCG Ebola Operations Advisor).²⁷

There had been insufficient capitalisation from recent outbreaks in terms of patient care. Ebola expertise was concentrated in the Centralised Task Force during the early stages of the outbreak, but at the time of POW ETC, MSF-OCG had gained in confidence and experience managing Ebola. OCG began operating more independently and was able to be more innovative.

The POW ETC benefited from improvements to medical equipment. The introduction of the Dosi-Flow intra-venous infusion system allowed 24-hour fluid input measurement, reducing the risk of fluid overload. In spite of the Centralised Task Force having concerns, “it turned out to be a good intervention” (OCG HQ staff). Other adaptations were implemented, such as retractable needles (ordered within 2 days of the field request), the ‘Piccola’ point of care blood biochemistry diagnostic tool (previously used at the Foya ETC) allowing Rhabdmyolysis to be diagnosed, as happens with some viral infections.⁸ In addition, the iSTAT biochemistry diagnostic tool (that had previously been approved for use in Foya ETC but failed in high temperatures) was successfully used in the POW ETC. The implementation of biochemistry analysis at the POW ETC resulted in a period of rapid adjustments to clinical protocols. Some of these changes were resisted by field staff who appropriately needed time to stabilise between alterations in work practice.

Patient care developed during the period of the POW ETC due to the opportunities presented by the new design of the centre, the dynamics of the outbreak and advancements in knowledge. In terms of clinical management, the ETC aimed to treat patients early, with more intensive management of fluids, and with close monitoring and treatment for acute kidney injury, sepsis, dehydration and acidosis, as recommended by Garcia Guerrero et al. in ‘Clinical Lessons learned and Management Recommendations for Patients with Ebola Virus Disease’.²⁸

Mental health services were successfully integrated into the POW ETC. This offered an important component of care that was not generally available in other ETCs, for the benefit of patients, staff and survivors. OCG drew on experience from Liberia, where the late arrival of the Mental Health (MH) Team resulted in difficulties of integration and training of the team (MH advisor, MSF-OCG). Although a psychologist was in situ from the POW opening, it was felt that the work “took a while to get going” (OCG field staff) but became a critical part of the service. It included counselling survivors, support for the reintegration of survivors into the community, and offering a service to national staff in regard to stigma and work stress. In addition, a member of the MH team would be present with the family during the viewing of the deceased, which was considered essential and was highly appreciated (MH advisor, MSF-OCG).

The use of survivors as caregivers was controversial between MSF sections. There were concerns regarding the risk of stigmatisation and safety of the survivors. OCG had employed caregivers on a small scale in Foya, and then formally at POW. The role “was very important for the younger patients (children)” (Survivor, OCG national staff caregiver).

The POW ETC incorporated paediatric care to fill the service gap in Freetown. Specific categories of Ebola patients were referred to other centres – patients needing ICU facilities were referred to Emergency (Italian NGO); maternity patients to the OCBA ETC (after it opened in January 2015); and all infected staff to the British Military ICU facility (within Save’s compound).

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²⁷ This included the measurement of elevated Creatine Kinase (CK), elevated Aspartat-aminotransferase (AST) and elevated Creatinine, coupled with consistent changes in the urine.
MSF-OCG was constrained by a lack of capacity to adequately respond to ‘non-Ebola’ patients. Such patients were discharged with an 'Ebola-free certificate' and referred to other services, if required. Interviewees felt that patient care at the POW represented the culmination of lessons learned to date, benefiting from staff willing to implement new developments.

**BALANCING STAFF SAFETY WITH PROGRESSIVE PATIENT CARE**

“In this outbreak, a dilemma between approaches to ‘staff safety’ and ‘patient care’ arose that did not need to be there” (OCG HQ staff).

As the outbreak progressed, with continuing high case fatality rates at ETCs, the MSF movement recognised the requirement to advance a more pro-active approach to the clinical management of Ebola patients. Secular shifts in clinical treatment strategy, including more intensive rehydration of patients, were discussed internally within MSF, amongst other actors and in publications.29

At the peak phase of the outbreak (namely August to September 2014, particularly in ELWA 3 ETC), it was felt that the emphasis on staff safety may have compromised patient care. The MoH&S in Sierra Leone wanted treatment to be more progressive and still had a persistent perception that “MSF practice was too conservative – for example, in not giving IV fluid to every diagnosed patient”.

The POW ETC was opened with a view to embed a more progressive culture to patient care. Infection control practice continued to be prioritised – the uncertainty about the virus’ ability to transmit and persist in the environment necessitated a rigorous approach, which was supported by innovations in the POW design.

However, the interviewed survivors wanted to share two examples of their care which were neglected. Firstly, in terms of ETC design, the survivors felt that the toilets were located too far away for patients who were weakened by their illness. Secondly, the patients described the accidental misuse of chlorinated water by patients, due to poor labelling of the tank taps. The 'disinfection solution' tank was located next to the other water tanks (for drinking and washing) and not secured against mistaken use by the patients. Patients reported that being sick with Ebola affected their thinking – so they did not realise that they were burning their skin and throat by using the disinfection solution instead of water. It was suggested that these tanks should have been fitted with a mechanism to lock them off or located separately from the drinking water tank to protect patients from harming themselves with the chlorine. We were told that staff members were made aware of the issues, but the problem had not been addressed.

**THE CARE OF SURVIVORS – SURVIVORS CLINIC**

“The staff were so nice – Doctors, other staff and security. I got encouragement and confidence from the staff” (Survivor).

OCG were the first actors to prioritise and provide for the needs of survivors. MSF began returning survivors to their communities in January 2015. Survivors could also meet in the Survivors Clinic when it opened in February 2015, where medical care, counselling and mental health services and material assistance (such as the distribution of home hygiene kits) were provided.

The Survivors Clinic was of great importance to survivors. Interviewees confirmed that there was 100% utilisation by survivors. An outreach component included health promotion and psychologists visiting survivors at their homes to discuss other residual issues such as stigma. (Please refer to section 2.4 Community Engagement for further details). MSF-OCG arranged monitoring appointments for survivors in regard to Ebola-sequelae eye complications.
One survivor related an anecdotal experience of a breach of patient confidentiality within the ETC. His wife overheard other staff discussing his diagnosis before the pair had been officially told; this impacted on her detrimentally. This breach was apparently not a regular or systemic issue, but had caused great distress to this survivor who later lost his wife to the disease.

It was felt that MSF could have had a role in advocating for better overall standards of the outbreak management activities. For instance, it was known that contact tracers (non-MSF) regularly operated without sensitivity for patient confidentiality. Neighbourhoods were frequently made aware of a member’s Ebola test results before the patient’s family was told. For example, a survivor recalled: “They called out in the street that I have Ebola”. NERC had employed students as contact tracers, and it was generally felt that all aspects of their practice were inadequate. Please refer to Epidemiological Control Measures Section for more details on MSF-OCG’s contribution to Contact Tracing.

2.2.2 Conclusions

Close coordination within the MSF movement will be necessary to develop a comprehensive collection of Ebola/VHF guidelines to include all aspects for a future outbreak response. All work needs to be based on research evidence and the widespread experience gained in this outbreak.

- MSF should keep the guidelines updated and adjusted to the field needs.
- MSF should contribute to the development of WHO Guidelines.
- OCG/MSF needs to remain vigilant to ‘topic fatigue’, which slows down the research and guideline assembly that needs to be completed.

The clinical practice validation process in OCG was clear to staff, but was not necessarily efficient. It had been intended that field medics could have had more authority to make adaptations to protocols, which fell within safe boundaries. This intention was fulfilled to some extent: Evidence suggested that most decisions still sought HQ approval during the period of the POW ETC.

OCG implemented innovations to patient care at the POW ETC, benefiting from new equipment for biochemical analysis and advanced knowledge. However, staff needed time to train and stabilise to protocol adjustments.

- Provision of paediatric care in the POW ETC was important.
- The employment of survivors to work as caregivers offered important psychological support for child patients.
- Additional laboratory equipment (Dosi-Flow, Piccolo and i-Stat biochemistry) allowed improvements to patient care.
- There was limited attention given to non-Ebola disease response.

The POW ETC successfully improved the focus on the management of patient care, while maintaining good infection control practices. However, staff did not adequately prevent patients and children from unintentionally using the chlorine solutions instead of water.

The Survivors Clinic was pioneered by OCG and is considered to be an important MSF contribution.

- The Survivors Clinic and associated services and activities may be critical for clinical and psychological welfare (stigmatisation management). A model plan for a Survivors Clinic could be integrated with the Ebola treatment guideline.
- Survivor home visits, counselling, support for the monitoring of Ebola disease sequelae and treatment for complications are important MSF activities.
- MSF should advocate for improved standards of confidentiality and outbreak management activities whenever and wherever it identifies failings.
2.3 Epidemiological control measures

The Epidemiological Control Measures section identifies key issues regarding the compartmentalisation of outbreak management activities; epidemiological data and contact tracing; and the use of an enforced quarantine policy in Sierra Leone.

2.3.1 Findings

COMPARTMENTALISATION OF OUTBREAK MANAGEMENT ACTIVITIES

“We were not good at throwing the net out to find out what was happening outside the POW” (HQ staff).

The Pillar system of outbreak coordination adopted within Sierra Leone resulted in siloed activities by actors. Interviewees explained that there was minimal interaction between the actors, so that the needs of the population and the benefits of synergistic activities were not identified. For example, there was some delay in the OCG team recognising and adequately responding to the difficulties faced by communities under quarantine: “OCG initially trusted partners too much to do the work properly” (OCG HQ staff). Contact tracing and line listing⁹, as part of epidemiological surveillance, was managed by two actors, WHO and UNFPA, who failed to act and coordinate effectively, which resulted in inadequate tracing and confusion of information. MSF-OCG attempted to create better interaction and integration of the community-level actors and services.

The failures in the community-level response created significant risks of infection transmission. Key examples included the mixing of sick patients and with asymptomatic relatives in ambulances, the lack of segregation facilities at Holding Centres and delays in diagnostics due to failures in laboratory services. OCG recognised that it also needed to address these failures in order to “serve the main aim which is to save as many lives as possible” (OCG Ebola workshop, Geneva. Feb 2015).³⁰

The HP team recognised that people from the local community, where MSF staff had been building relations and trust, preferred to ‘self-report’ to the OCG staff, rather than call the ‘117’ service. OCG were open to this approach and it proved effective - it was observed that “…MSF-OCG health promoters calling the hotline were able to achieve faster response times”.³¹ OCG had also agreed, from the beginning, with the neighbouring community that they could ‘walk-in’ for admission to the MSF centre if the patient was ambulatory.

EPIDEMIOLOGICAL DATA AND CONTACT TRACING

“Field epidemiology was not used enough” (HQ staff).

Interviewees felt that MSF should not have relied on other actors for surveillance data and contact tracing. There were disagreements between MSF and WHO/CDC regarding the approach to epidemiological surveillance and contact tracing. There were opportunities to use MSF epidemiologists to collect higher quality data and to offer training to other actors.

Good quality epidemiological data is required to make informed strategic decisions and to avoid ad hoc changes in activities and priorities. “Epidemiological data should have been used more

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⁹ Line list is an important product of the contact tracing activity: “A line list is a table that summarises information about persons who may be associated with an outbreak. Each row represents a single individual, and each column represents a specific characteristic about that person. Column information includes identifying demographic, clinical, and other epidemiologic information, including risk factors possibly related to the illness. A line list helps organise preliminary information gathered during the early part of an outbreak investigation …” (Definition taken from http://foodborne.unl.edu/public/role/epidemiologist/lineLists.html).
progressively, and MSF has in-house capacity to do it... MSF should have collaborated with others” (OCG HQ staff). MSF-OCG epidemiologist (from Epicentre) successfully collaborated with LSHTM to make projections for NERC; other opportunities could have been explored to support OCG’s intervention planning.

The OCG team was late to adequately address the need for improved contact tracing, reflecting a failing of the larger response. “There was not enough focus to find solutions to make contact tracing work effectively early during the outbreak response... This was a mistake – stopping transmission requires effective contact tracing” (Ebola Advisory Group to Director-General WHO).

Once mandated, OCG designated six nurses to conduct contact tracing. The nurses visited the community to capture information of better quality than the information identified by the official contract tracers (students used by WHO/UNFPA). We understand that OCG engaged with the ‘auntie networks’ to help increase the quality of these activities. While there is no specific recorded data, the recollections and opinions of both international and national staff was that the ‘auntie networks’ were very useful in building trust and tracing contacts.

OCG has recognised its potential contribution to surveillance systems. Epidemiology will receive increased priority in future outbreaks. MSF “needs to consider contributing to prospective surveillance systems in at-risk countries, and then having strong surveillance quickly set up at this first signs of epidemic. But not taking on absolute responsibility that belongs to the state. E-prep toolbox needed for next epidemic” (OCG Ebola workshop, Geneva. Feb 2015).

**QUARANTINE**

“The quarantine system was an extreme health hazard, and dangerous for the people inside quarantine households” (OCG field staff).

GOAL, Concern and Oxfam told MSF-OCG staff that they wanted MSF to lead against the enforced quarantine policy. However, OCG “was too silent about this” (HP Activity Manager). MSF was trusted as a leader; the opportunity to coordinate advocacy strategies across NGOs was missed.

Interviewees suggested that MSF lacked evidence to advocate against enforced quarantine. However, the suffering caused by the strategy was visible and documented by MSF-OCG. For example, “Health Promoters (HPs) were responsible for knowing about and checking in with all quarantined households/clusters in their assigned areas. This started as an effort to conduct an initial assessment of the humanitarian situation inside the quarantines but grew into a larger activity as shortages of basic needs including water, food, and latrines were nearly universal problems”.

Interviewees felt that the lack of clarity from the MSF movement on the enforced quarantine policy resulted in the OCG team delaying full engagement with the needs of families and communities placed under military-enforced quarantine. OCG eventually developed response activities: “The HP team focused on two key areas: 1) documenting the humanitarian needs of those under quarantine – reporting the crisis to the Ebola Command Centre... and 2) building trust between our staff and those under quarantine to reduce the amount of time between when a person fell sick and when they would report the illness...”

MSF-OCBA provided ‘home protection kits’ to families in quarantine. MSF-OCB had developed the kits for use in Liberia and surplus kits were brought to Sierra Leone. The kits contained, among other items, face masks, gloves, and surgical plastic gowns. They were intended to allow people to protect themselves if someone within the quarantined household fell unwell. They were not intended to be used as home-based care kits.
2.3.2 Conclusions

Despite the Pillar system of outbreak coordination adopted within Sierra Leone, which resulted in siloed activities by actors, MSF chose not to prioritise attention on all the components required for successful outbreak management. In retrospect, this can be seen as a failing.

- Arriving late to Freetown compounded the delay in recognising the failures of response by other actors and OCG’s attempts to address the needs of the local community.
- MSF should have played a stronger role in preventing health service-associated disease transmission.
- MSF could have used their influence on the global stage to address the critical need for properly managed laboratory diagnostics, the care and segregation of patients in holding centres and the safe use of ambulances.

OCG should have given greater priority to epidemiological data collection and contact tracing in Freetown.

- OCG did not have adequate in-house epidemiological human resource capacity. Standardised data collection tools would have allowed more accurate, timely epidemiological monitoring to better project the outbreak dynamics and enable comparison to the regional context.
- Improved contact tracing could have reduced disease transmission. OCG’s use of nurses from the community was helpful, but this work needed to be conducted earlier and on a larger scale. Managed properly by the authorities, contact tracing should eliminate the need for the expensive and harmful enforced quarantine strategy, which not only breached the rights of the population, but also caused alienation and unnecessary suffering.
- Voluntary quarantine has a role; to achieve this, authorities needed the engagement of the population, which had been lost early in the outbreak. By contrast, enforced quarantine practices - with the lack of provision of basic services for those under quarantine - compounded this lack of community engagement with detrimental impact (cases not being reported due to fear of the enforced quarantine).
- Public health HR capacities within MSF seem to be lacking; public health skills would improve strategic planning and operational activities across all levels of outbreak/crisis response.
- There were missed opportunities as medics should join the WHS/HPs in outreach activities to identify emerging disease patterns in the community, and assist with identifying health needs of families in quarantine for referral.
- There were missed opportunities to have medical epidemiologists working with health promoters in contact tracing activities.
- MSF plans to develop tool kits to enhance Epidemiological Control Measures.

All MSF OCs were weak in advocating against quarantine and failed to suggest alternative solutions.

- MSF failed to invest the time and resources to better understand and respond to the enforced quarantine strategy (operationally and through high-level advocacy).
- MSF should have spoken out against quarantine being used as a substitute to good contact tracing. OCG could have responded earlier to support the failures inherent to the quarantine strategy, assisting communities in isolation.
- Some actors considered the MSF-OCBA distribution of ‘home protection kits’ to quarantined homes progressively; these kits may play a role in future outbreak responses.
2.4 Community Engagement

“We need professional people to come house-to-house with health promotion messages” (Survivor).

This section will describe the findings concerning early failings in community engagement, OCG’s work to gain community engagement and approaches to improve engagement.

2.4.1 Findings

**EARLY FAILINGS IN COMMUNITY ENGAGEMENT**

“...I was told the ambulance will come the next day, but nothing. So after two days I went to the security guard and told him... if no ambulance, I will open the gate and take my family to hospital. This caused so much panic in the community... In two hours, two ambulances arrived. Everyone in the street come out to watch and see the ambulances. This was in December.”

Patient distribution to the various ETC’s was managed by the District Ebola Response Centres (DERCs) in this outbreak. Families often did not know what happened to their loved ones – whether they had died or where they were buried. Clothes were burnt and possessions at home were often destroyed, without proper consultation, as part of the decontamination process. These insensitive household decontamination practices, coupled with loud ambulance sirens in residential areas and the fear of quarantine, resulted in a lack of volition to contact ‘117’ when individuals developed symptoms of Ebola.

Rumours, conspiracies and misinformation were widespread. Public Health messages were inconsistent, negative in nature and caused fear, suggesting that there was no treatment for Ebola and that infections will result in death. Survivors said they had not believed Ebola was real; they had believed rumours such as that if people went to see doctors with symptoms of Ebola, they would have an “injection in their big toe to kill them” (Survivor). There was late recognition (Feb 2015) that the use of loud megaphones for health messages created fear for residents. There was a general failure to give positive messages to promote better health-seeking behaviour.

Communications materials and messages were developed and adapted to the rapidly changing situation only slowly, which increased confusion within affected communities. For example, the core public health materials were taken from those developed by MSF and submitted to the MoH&S in Kailahun in July 2014. “These messages, developed for a rural population, were simply rolled out across the country and never adapted to the urban environment of Freetown by MoH&S and UNICEF” (HP Activity Manager).

OCG energised its HP team to gain specific insights in the third week of Jan 2015 by conducting a rapid household survey of 400+ persons to assess the current understanding of the urban population with regard to Ebola and Ebola response activities. This survey revealed that those in quarantine often had little or no provision of food, water, and healthcare. OCG thus increased its focus on community engagement, communications and outreach activities.

When OCG began to understand the depth of the gaps with regard to outreach work and it was evident that the WHO guidelines for household decontamination were not as rigorous as those of MSF, there was a further incentive for OCG to partner with select NGOs. MSF WHS and HP staff trained other actors in household decontamination (see ‘Training’ sub-section in the ‘Capacity Building’ sub-chapter). MSF-OCG developed a highly regarded system for vehicle and ambulance decontamination, which was validated by the WHO.
OCG WORK TO GAIN COMMUNITY ENGAGEMENT

“Behaviour change work lacked investment generally, but MSF had good intelligence on community values and engagement – this was needed to stop transmission” (NERC).

OCG’s POW ETC had a significant task to gain the trust of local communities, in spite of the local and alumni endorsement for the location of the ETC at the school. Prior to the POW ETC, family and friends of patients typically stayed away from ETC facilities as the focus was on patient isolation. HP staff reported tensions with the community lasting through December 2014, but eventually the POW ETC’s innovative approach to encourage family visits was successful.

The number of HP staff was increased from four to fifteen by January 2015. This allowed the HP team to split, with the larger teams working within the community, assisting with household decontamination, supporting families for burials and sharing positive health-seeking messages. Other HP staff worked in the ETC, speaking with families and patients in the low-risk areas (wearing the light PPE). These activities, in addition to the locally recruited nurses tapping into the ‘auntie networks’, had successfully increased trust within the community. There was an opportunity to further enlist the support of ‘women’s secret societies’, but this approach would have required more input from experienced anthropologists.

APPROACHES TO IMPROVE ENGAGEMENT

“MSF needs to be transparent in Ebola actions” (HP staff).

A certain transparency of activity was built in to the design of the POW ETC as described earlier (see the ‘Infrastructure’ section). These factors successfully reduced tensions with the community. There were opportunities for visitors to don PPE and enter the high-risk zone, but this was not systematically offered and could perhaps have been better accommodated.

From late January 2015, HP staff accompanied survivors to their homes in the communities. This provided opportunities to share positive health promotion, infection control advice, and also to address other specific complaints at the community level. The HP and Mental Health Team would follow up with patients regularly, such as at 2 weeks and at 4 weeks post discharge, or at the Survivors Clinic. It was felt that this facilitated survivor reintegration into their communities, reducing stigma, and should have been prioritised earlier in the outbreak as many survivors had suffered rejection.

Interviewees suggested additional outreach components. For example, OCG WHS household decontamination teams could have offered a household member the opportunity to don PPE and join the team during their household decontamination; this was offered in other interventions and was important to maintain respect. An HP, and a psychologist, accompanying WHS teams for burials and household decontamination activities, could give further critical support.

Other secular factors supported the success of POW’s community engagement work:

- ‘Safe and dignified burials’ were becoming mainstream and accepted by communities.
- Due to better and earlier clinical intervention, more survivors were returning home, giving hope to families and communities, thus increasing improved health-seeking behaviours.

These combined factors contributed to a virtuous circle and a reduction in cases in the region; it is difficult to ascertain the quantitative impact of OCG’s outreach activities but qualitative reports were positive.
The OCG team made considerable efforts to gain community endorsement through a more positive presence with supportive messages. However, there was limited community mobilisation\textsuperscript{10} work mentioned by interviewees. One example was the invitation of community leaders to visit the POW ETC so that they could help build confidence in the ETC and tackle stigma. This represents attempts to mobilise the community to take their own grass-root action to prevent transmission of the disease, rather than merely act on messages.

2.4.2 Conclusions

Community outreach is an essential component of outbreak management. Specific activities preventing transmission should have had the same focus as the activities for isolation and treatment during an outbreak of this scale. MSF-OCG outreach activities needed better prioritisation, resourcing and strategic planning.

- OCG contributed to a respectful approach to household decontamination – if not managed well, the residents will not adequately inform the teams about the affected areas in their homes.
- OCG lacked social science capacity (anthropologists/other social scientists) to enhance understanding of and engagement with culturally determined health behaviours, superstitions and religions, due to their influence on disease transmission.
- Rumours and misinformation were not appropriately identified and managed.
- Positive messages needed to be developed to encourage better health-seeking behaviour.

After initial tensions, MSF-OCG and the POW ETC became more trusted by the community. The use of locally hired nursing staff linking with the ‘auntie network’ built trust, enabling MSF to access contact tracing information that would otherwise have not been accessible.

- Adequate numbers of HP staff, recruited from the local community, improved links to community networks, reducing community tensions and fears in reporting cases.
- The HP team (team split between ETC work and community activities), successfully applied lessons learned, filled gaps and found solutions.

MSF recognises the need to invest early in community outreach and engagement activities, as this increases confidence in the response and improves health-seeking behaviour, benefiting individual and public health outcomes. However, MSF struggled to deliver this pillar to quality standards at times during the outbreak.

- Accessibility at the ETC, such as family visiting facilities, helped remove tensions with the community, and provided critical reassurance for the patient and their families.
- Engagement activities with the community were successful in breaking down barriers – examples included community leader invitations to the ETC, and the returning of survivors to their homes.
- All the community-level work, and the survivor reintegration program in particular, led by the HP and Mental Health teams, were important activities in reducing stigma and in providing positive health messages.
- There were missed opportunities in community mobilisation through work with community advocacy groups or student and women’s groups, which were not pursued by OCG.

\textsuperscript{10}Community mobilisation: “A capacity-building process through which community individuals, groups, or organisations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs, either on their own initiative or stimulated by others.” (Howard-Grabman, L. and Snetro, G. 2003. How to mobilise communities for health and social change. Baltimore, MD: Health Communication Partnership).
2.5 Capacity building

“Ebola emphasised a lot of problems that we (MSF) have everywhere – Ebola was quick, huge and put things under the light” (OCG HQ staff).

Capacity Building in this evaluation analysis the training of staff in pre-deployment and during the crisis, the need to develop the profession of HP staff and activities, emerging issues related to maintaining the capacity of national staff and the need for information sharing and knowledge management.

2.5.1 Findings

TRAINING

“MSF showed that they can be leaders in training” (MoH&S).

Pre-deployment training was conducted every week in Geneva. MSF-OCG collaborated with IFRC to deliver these sessions. Some interviewees felt that there was too much emphasis on practicing donning and doffing of PPE, and not sufficient detail on clinical management. Those providing the training explained that the intention was to provide a short, accessible course on transversally relevant issues, which also included three ‘clinical’ lectures about the disease, symptoms and treatment. In addition, pre-departure ‘e-briefings’ for international staff were provided by MSF Canada, with input from OCG.

National staff received initial training in country, including the ‘MSF Induction’, once they were hired. Field staff felt “invigorated when a training team came from HQ” (OCG field staff). The HQ Training & Education Team visited ETC’s every 4 to 6 weeks. National staff reported that the trainings were ‘perfect’, with refresher sessions covering “all sensitisation, knowledge of Ebola, what it is, how you catch it...” (National staff). Training on ‘Community Dialogue’ was developed and organised by the OCG HP team and conducted for OCG and OCBA staff. All national staff interviewed asked for a ‘certificate of participation’ for their work portfolios. These were not consistently offered by OCG.

MSF reported the overall lack of experienced humanitarian actors with the required emergency response capacity (see MSF report ‘Where Is Everyone’, July 2014). WatSan staff provided training for other actors and reported a queue of people (external actors) wanting to visit the MSF ETUs. Both formal sessions and ‘on the job’ training was provided by MSF-OCG for other NGOs, such as Handicap International (HI) and the Adventist Development and Relief Agency (ADRA). Topics included household decontamination, disinfection of vehicles and health promotion. The three formal two-day training sessions benefited 60 HI and ADRA staff: “We saw a big improvement in work done as a result of training” (MSF field staff).

MSF-OCG shared guidelines with NGOs they were mentoring in the field and the MoH&S also provided training for NGOs, but some preferred to be trained by MSF: “As a result, different organisations were learning slightly different guidelines, which then became difficult to integrate” (MoH&S). For example, MSF used different, more rigorous, protocols than the WHO; this resulted in HI field staff being inconsistent with which guidelines they followed.

Interviewees felt that MSF should have been involved with Ebola intervention capacity-building earlier. “It feels like MSF was considering more its own emergency response, rather than the need to build capacity for a joint multi-stakeholder stronger response. Only at the end of 2014 did MSF start to understand and have the time, capacity, and will to share training with others” (MSF field staff). Others shared this view: “The training system in the field was good, but it should have engaged other Operational Centres and non-MSF personnel earlier. It took months for the inclusive approach to happen which was necessary for the scale and complexity of the response” (OCG HQ staff).
PROFESSIONAL DEVELOPMENT - HEALTH PROMOTION

“We would sit with them (the international staff) and discuss; we all look at possible ways and worked towards it” (OCG HP national staff).

Experienced international staff stressed that the MSF Health Promotion (HP) human resource pool is limited in number and this had constrained MSF in their community outreach activities. Additionally, there were no standard MSF guidelines for HP. A national staff HP team leader described receiving his training from colleagues who had worked in Liberia, making it an exchange of personal experience rather than a formal training. However, HP teams benefited from mutual support: “I can text (to the HP international staff lead) in the evening and get a response if there is something to report... We worked well together” (HP staff).

HP staff used their own clothes for their community visits. HP staff suggested that a work uniform should be provided for HP staff to wear for community work. Items would need to be durable for regular washing and disinfection.

MAINTAINING THE CAPACITY OF STAFF

“There was not sufficient effort by MSF to support national staff in the face of stigma, although there was a big improvement in the way this was managed between Liberia and the POW.” (MSF HQ staff).

National staff suggested that about one-half of the OCG national staff moved out of their own homes while working at the POW ETC. These decisions were due to reasons related to fear of Ebola. Many shared accommodation, while those who remained in their family homes tended to live in a different room, to ensure physical separation from their families to reduce transmission risks. Some described that they regularly slept in or on the hoods of cars close by the ETC. The stigma was such that members of their community of some staff told their property owners to remove them, as they were considered a transmission risk due to their work at the ETC.

While some interviewees responded that “OCG did everything it could and should have done for staff”, the provision of on-site accommodation for national staff that needed it, would have reduced tensions. The HP team formally intervened in about 10 cases of staff stigma. However, the national staff we interviewed indicated that they had not been aware of the HP support available for them. Others suggested that the provision of a daily nutritious meal for staff in the ETC would have resolved some issues (such as the controversy surrounding packets of biscuits being taken away from the ETC by staff); staff described being unable to easily buy or eat cooked meals due to their ETC-imposed working and living arrangements.

Systematic stress management sessions and group sessions for staff (national and international) had not been allocated from the beginning of the POW intervention. The workload of the MH team and need for continuous follow-up and supervision of local counsellors were a large constraint for developing better support for staff. A MH advisor (MSF-OCG) suggested MSF include a designated specialist (separate from the team addressing patient needs) to be able to follow and support staff.

MSF national staff retrenchment and salary decreases (due to falling demand for numbers of staff at the ETC) were not handled in a sensitive, standardised manner. For example, the MSF-OCG ‘ballot drawing’ for dismissal was perceived as unfair to staff. In the event that job performance evaluations are not possible, the ‘first in – last out’ method would have been more acceptable to the national staff interviewed. Whichever dismissal system chosen, it should have been transparent and consistent from recruitment onwards.

We were told that there was no final debriefing or work evaluation process for OCG national staff, but they reported being satisfied with the quality and frequency of the daily team meetings and briefings.
INFORMATION SHARING AND KNOWLEDGE MANAGEMENT

“It happens easily that we forget what we have been doing – in two years from now, we could have forgotten. This is a problem with MSF – not just about Ebola.” (OCG HQ staff).

Recognised structures, systems and processes regarding information collation and dissemination were limited within MSF-OCG. Dissemination of information from HQ to field has been described as being primarily “…by email, and it was expected to be appropriately disseminated in the field” (OCG HQ staff). End of Mission and Visit Reports describe the situation challenges, the successful solutions implemented and recommendations for further improvement. Excellent examples include those of Anja Wolz and Ella Watson-Stryker of OCG, and Rosa Crestani of OCB. These rich reports provide insightful records of the crisis and MSF’s response; they offer technical, valuable real-time, on-the-ground experience. Due to the absence of rigorous documentation of decision-making during this crisis, these and other similar documents will be helpful for future response preparation.

With the exception of the relatively consistent weekly SitReps, email exchanges were a common substitute for a more formalised reporting scheme. This is understandable considering the ease of email exchanges under the intense circumstances, but emails are not efficacious for data collation and are rarely revisited to edit and compile into ‘reports’, resulting in lost documentation, experience and information. There was not a formal, systematic and structured process to share new or emerging knowledge within MSF (or with others) regarding Ebola or the outbreak crisis as a whole.

Given that this crisis embodied the need for knowledge building, more than many other MSF activities, it was proposed that a dedicated MSF Information Management team should be tasked with collating evidence and resources to share through formal, publicised platforms. “There needed to be an Information Management person within the Centralised Task Force to collect epidemiological results and information on contexts that may affect performance, and to analyse results to present to the high level platform of decision-makers... This type of role needs to be present also at the field level, able to clarify inter-Sectional decisions based on evidence, with data managers within each project” (OCG field staff).

Save the Children proposed that a public web-platform for sharing and disseminating knowledge regarding Ebola was needed in this crisis. Other actors similarly felt that this could include community engagement guidelines and resources (data, research), which would have helped to ensure that best practice was more accessible to all the actors. “MSF evolved according to MSF, and not according to the situation – MSF needs to absorb more the larger situation, account for and consider all information coming from outside actors, and having discussions and decisions not only based on MSF” (OCG Operations).

2.5.2 Conclusions

The crisis allowed successful collaborations between actors to flourish, through both pre-deployment and in the field training activities.

- National staff should be issued ‘certificates of participation’ for all their training activities; this was not done consistently during the crisis.
- MSF offered training to other actors and could be proactively developed. Formal training of other NGO actors earlier in the crisis may have offered the opportunity for increased actor capacity and confidence to assist in the outbreak. This approach would have required MSF to develop a different strategic vision to its response.
- The MSF Training and Education Team was widely appreciated, although it was over-tasked. Increasing the size and capacity of this team could have resulted in better coverage of specific trainings and more frequent precocity of protocol refresher training.
The HP role could be ‘professionalised’. The role of the HP team in community engagement, in the ETC and with the WHS household decontamination teams, is important in controlling disease transmission.

- The capacity of the HP team was increased only after the first month of the ETC activity, in terms of numbers of national staff, the addition of an experienced international HP supervisor, in training and in identifying work roles.
- Investment in the professionalization Health and Hygiene Promotion will benefit response in future outbreaks.
- Formal training mechanisms (and guidelines) need developing.
- HP staff work clothes/’uniforms’ provided by MSF need to be considered for the daily work in the community.

The capacity of staff should be maintained.

- National staff had difficulties concerning accommodation and meals. It could be helpful to provide these services to staff working with infectious diseases.
- Staff (national and international) needed more support with issues related to stigma; all would have benefited from improved access to HP support, education and mental healthcare.
- The national staff hiring/firing practice was not considered to be consistent or acceptable by most national staff.
- Final evaluations and/or debriefings of (all) staff were not implemented. These processes can prevent the escalation of concerns while allowing for continual improvements in practice. Reflection on practices can benefit all parties.

There is a priority to capture, document and suitably disseminate knowledge.

- There was not a recognised system of dissemination of information during the Ebola crisis, both within MSF-OCG and between the MSF OCs.
- There was a need for a dedicated team of Information Managers to operate across all levels of MSF.
- It was proposed that a managed knowledge platform, accessible to organisations working in the field, would have benefited the sharing of emerging information, data and protocols during the crisis.

2.6 Relationships with other actors

“MSF’s heart is always in the right place – their priorities are the patients in the community... MSF does not coordinate well, but is a champion of their own beliefs” (NERC staff).

The key themes that emerged concerning MSF’s and OCG’s relationships with actors were related to MSF’s roles in coordination, supporting other actors, inter-actor dynamics and the relevance of liaison activities during the crisis.
2.6.1 Findings

COORDINATION ROLES

“As case numbers escalated in Freetown, everyone was relieved to see the POW ETC running so quickly and professionally” (Welbodi Partnership).

MSF-OCG felt that there were reasonably good coordination structures in Freetown, as compared to experiences in Guinea. The NERC was described as being dynamic and responsive. There were concerns that the 6 pillar structure resulted in siloed activities, although others felt that it provided an important coordination framework for the response. However, NERC lacked a medical strategy, the MoH&S was left out of the structure, and WHO did not successfully orient the medical actors. The NERC and relevant DERC led decisions in regard to the response for the Western Area, which included Freetown. DFID were highly influential as they held the funds and control over resources, including the British Military. The U.S. Centres for Disease Control and Prevention (CDC) had the technical expertise, but unlike Liberia, they were not involved in implementing patient care or activities in all pillars.

Due to the limitations of these response bodies, OCHA, among others, suggested that MSF should have been involved in the strategic coordination of the outbreak in Sierra Leone from the start. However, others explained that “MSF would be delayed by being too involved in these government, donor, and UN driven systems” (OCG HQ staff). Some MSF staff regretted the disengagement of MSF from the response coordination mechanisms and other actors involved in the Ebola response. Some described that the scale of the outbreak influenced MSF’s decision: “In small outbreaks, MSF should coordinate the response – if big, then MSF needs to stake our limits – it’s not our mandate to coordinate a huge outbreak” (OCG HQ staff).

MSF was part of the coordination mechanisms, to different extents, in Liberia and Guinea. The Combined Joint Inter-Agency Task Force (CJIATF), the predecessor of NERC in Sierra Leone, included DFID, the British Military and UNMEER, but not the then present MSF sections. This was described as when “MSF lost its space at the table in Sierra Leone” (OCG field staff). As a result, NERC perceived MSF as an ‘implementing partner’ rather than as a ‘strategic partner’.

WHO leaders met with MSF in October 2015 to discuss MSF’s future engagement in Sierra Leone. MSF (OCG not present) agreed to work more closely with the WHO and the MoH&S, with a focus on Ebola survivors. MoH&S suggests that MSF could have many roles for the transition and the future, such as mother and child programmes.

Importantly, not only OCG but the entire MSF movement, must decide on its level of participation at the global level to the WHO-proposed reforms for ‘Emergency Medical Teams’ and ‘Foreign Medical Teams’ (EMTs and FMTs) to form a register of pre-qualified and pre-certified personnel for crisis and outbreak surge capacity. Perhaps these reforms will ensure the evacuation of international staff in future crises, an issue which was a frustration to MSF during the outbreak.

SUPPORTING OTHER ACTORS

“GOAL would not have been able to open their treatment centre without the support of MSF” (GOAL).

NERC described MSF-OCG as influential over other actors for clinical and tactical direction. The POW team provided ETC support to International Medical Corps, Save the Children and other MSF sections. MSF also provided advice and information to DFID, the Chinese teams and CDC.

In August 2014, Save the Children were asked by DFID to set up an ETC in Kerry Town, but struggled to deliver by November as had been planned. The OCG team was asked to assist Save, and did so
within 24 hours of the request. Two OCG staff went to the Kerry Town Save ETC in person and spent two days reviewing work and providing advice: “It was extraordinarily productive” (Save the Children). OCG finally chose not to get involved in the clinical management of the ETC due to the potentially risky division of responsibilities within the ETC between the various DFID contracted partners.

**INTER-ACTOR DYNAMICS**

“MSF has a particular culture – if you can’t keep up with them, or won’t do it their way, then they are not interested.” (Save).

MSF was critical of the international and national response. Despite the government welcoming OCG to Freetown, MSF in general, and OCG in particular, consistently described a difficult relationship with the government in Sierra Leone: “Many problems existed working with MoH&S” (OCG field staff). OCG considered government relations better in both Guinea and Liberia. One key cause of the poor relations was that there was a lack of experience and negotiation skills among some of the senior MSF staff. “Citing previous mission experience does not mean that an individual is good at high-level management skill” (OCG field staff).

Tensions with the MoH&S increased in March 2015 when the MSF International Office criticised the Government of Sierra Leone for its poor response efforts. While such decisions to express criticism were thought through at the higher levels of MSF, on the ground it was felt that the message was damaging: “In the media, MSF was suggesting they were the leader and that the government were creating barriers. However, on the ground the government wanted more collaboration from MSF” (OCG field staff). It was felt that MSF was so confident that they did not collaborate with actors with different opinions. “MSF became something of an island, rather than strengthening capacity within MoH&S” (NERC).

The MoH&S wanted more MSF participation in the Clinical Management Pillar and at the higher level in National Coordination: “MSF were really good (at technical and operational input) when they came to the table – but they often wouldn’t come” (High-Level external actor). This attitude seems to have changed as time went on and MSF improved their ability to participate in the response mechanisms: “MSF reporting and presence at the daily NERC Evening Briefings was consistent, important and respected” (NERC, reporting OCG engagement - from Dec 2014 onwards).

The King’s Sierra Leone Partnership (KSLP) felt that MSF was disconnected from the wider response system. “The MSF attitude tends to be a bit inflexible in its principles about not collaborating with the government and official systems and structures; they tend to have their own protocols and guidelines with small capacity to vary and adapt” (KSLP). Partners felt that MSF-OCG had great resources and facilities, good standards of care, guidelines and protocols; however, MSF did not always seem to recognise the limitations of the state healthcare system when referring patients to state facilities. Other comments described “a lack of sharing of data, of cases with unusual presentation, during the outbreak with partners” (KSLP). It was not possible to triangulate this experience with other actors. Nonetheless, referral practice from OCG perhaps warranted better communication.

More broadly, KSLP had praise for MSF’s contribution: “We are extremely grateful for everything that has been done and appreciate the hard work and big effort made by MSF”. Others shared this positive message: “We appreciated MSF coming with all their knowledge of what to do – they responded fast! Yes, at times MSF was at odds with MoH&S, but regardless, the people of Sierra Leone were really grateful and they were not concerned about the MSF criticisms of the MoH&S” (NERC).
All partners heralded the Inter-Sectional Advocacy and Liaison Officer role (hereafter referred to as the ‘Liaison Officer’) as solving some of the representational confusions typical for MSF. Some suggested that the Liaison Officer role should become standard within other countries where more than two operational sections are active. There were suggestions about the remit, such as identifying the meetings most relevant for specific MSF individuals to attend: “There could be up to ten MSF personnel coming from the different sections. This needed coordinating”. (MSF field staff)

The Liaison Officer should be responsible for managing the information emanating from regular meetings, to document and share emerging issues with all MSF HoMs and MedCos, and speak on behalf of all in-country Operational Sections. In practice, the Liaison Officer “did not have enough authority to speak on behalf of all the sections, due to the difficult internal MSF politics. 90% of the role was building relationships (not advocacy), but this was appreciated within and outside of MSF” (OCG field staff). The Liaison Officer successfully built bridges with the major actors. The MoH&S suggested that it would have been ideal to have a medically trained MSF liaison person working more closely with the government: “There was a paucity of rigorous advice” (MoH&S).

2.6.2 Conclusions

MSF has important opportunities to increase its influence for the welfare of populations if it contributes at the strategic and high-level coordination level in crises. It is possible that this outbreak could have been led differently, and better, with an MSF presence in the relevant national strategic coordination platforms – particularly in Sierra Leone where MSF was absent.

- MSF has future opportunities to be involved at some level in the EMT/FMT networks of pre-qualified and pre-certified medical teams, as part of the WHO Ebola reforms.

MSF should seek to maintain its exemplary reputation for ‘show-how’ support to other organisations. As the leading humanitarian medical NGO with the greatest capacity, MSF is suitably positioned, particularly following the Ebola crisis, to encourage and support other humanitarian actors to become operational for future emergency outbreak responses.

Inter-actor dynamics:

- There were tensions with key stakeholders, such as the MoH&S. These important institutional relationships would have benefited from better prioritisation and skilled management form the outset of the outbreak in Sierra Leone.
- Given the feedback from NGO partners, MSF may need to adjust its patient referral practices according to the context, ensuring that MSF collaborates and communicates effectively with other actors.

The Intersectional Liaison and Advocacy Officer role was important for networking, meeting attendance and sharing information amongst MSF sections. With support from Operational Sections, there is an opportunity to develop the role’s advocacy remit, presenting a stronger, clearer, unified MSF voice to increase MSF’s influence and minimise the risk of airing internal MSF disagreements.
2.7 Research, monitoring and evaluation

“MSF were open to doing research – quite a change” (Scientific Advisory Committee on Ebola, WHO).

The Evaluation analysed the emerging themes of MSF’s position regarding research during the crisis, research opportunities and opportunities lost, research collaborations and weaknesses in monitoring and evaluation during the crisis.

2.7.1 Findings

**MSF’s position regarding research during the crisis**

MSF collaborated on research at the global level during the crisis. However, many within MSF report that the movement failed to adequately conduct research for the benefit of patients. A total of approximately 16,000 patients with Ebola in West Africa were managed by MSF, yet there is still little known about the disease and its optimal management. To many, this represents a lost opportunity.

Interviewees explained that there was little or no pre-set agenda for operational research and no formalised MSF guidance for research in emergencies to use during this outbreak. MSF took too long to recognise the need for collaborations, and to work through the ethical dilemmas concerning their involvement in anti-viral and vaccine trials.

Other actors have been more complimentary about MSF’s role. Examples include MSF being willing to use off-label drugs, and being proactively involved in the “high-level work developing generic protocols for future research in crises” (DNDi).

In October 2014, MSF Medical Directors formed a research platform to support and coordinate research activities. This was the first time such a MSF structure had formed external high-level collaborations, bringing together senior-level expertise and decision-making. It was generally seen as a success, demonstrating MSF’s adaptability and intended commitment to research in this crisis. The platform pledged that “efforts will be made to ensure that the MSF collaborating studies’ results are published in established peer-reviewed journals (open access) and disseminated via the media to inform the global community affected by the Ebola”.

Comments confirmed that OCG seniors had real interest in research, but the processes for research proposals were too slow. In parallel, “attempts to progress research were at times delayed by the high workload demand on field staff who resisted additional responsibilities” (OCG HQ staff).

Research skills were also lacking in the field: “We need trained staff to collect good data, set up research and supervise it, otherwise the data is poor and the research will collapse” (OCG staff).

During the crisis, some interviewees felt that there was inconsistent support for research and surveys from OCG HQ. A more formal OCG research platform, if permanently created, could improve efficiency and provide more expert input into ethics and protocol design. OCG could cultivate established relationships with individuals at research institutions such as LSHTM and the Swiss Institute Tropical and Public Health Institute via this platform. Partners would necessarily need to have an understanding of the limitations of working in the humanitarian context. Identifying such a team with the most appropriate skill set needs to be done in advance of the next crises.

**Research opportunities and lost opportunities**

MSF prioritised its research investment in four antiviral drugs. However, they had limited effectiveness in the population under study. In hindsight, it was felt that MSF should have focused on rapid diagnostics and vaccines – where there was more progress – and the use of non-licenced and experimental treatments. The WHO had given ethical guidance and agreed that the risks for using
these treatments were justifiable, but MSF did not overcome internal resistance. Although some influential medical and operational OCG personnel were in favour of using novel treatments in November/December 2014, OCG did not implement the plan at the POW ETC.

The compassionate use of vaccine for MSF staff was considered (in collaboration with a Canadian institution), but as the crisis escalated it became difficult to progress due to the burden of the response. The WHO had approved the compassionate use of vaccine for healthcare workers by the time of the opening of the POW ETC, but “MSF had not reached agreement on this issue seemingly due to a resistance in some layers of OCB. If vaccination trials had been faster, other non-Ebola health structures could have opened faster” (DNDi).

OCG’s ‘chance research’ affected practice within the crisis. The Foya ETC (Liberia) had a stock rupture of CoArtem anti-malarial and the team used the ASAQ (Art + Amodiaquine) combo for a 12-day period. This resulted in a clinical observation that prompted attention. MSF-OCG analysed the mortality rate data for before, during and after the anti-malarial change, and estimated that while using ASAQ the case fatality rate decreased. MSF proceeded with ASAQ in their protocol as it posed no greater risk to patients, and was possibly protective (OCG HQ senior staff). This accidental discovery justified further research and MSF subsequently lobbied the WHO to investigate the finding.

OCG also pioneered the rapid deployment of the new OCG Geographic Information Systems (GIS) Unit, using data from MSF, WHO and CDC. OCG’s Logistics Department operationalised the GIS mapping team to support the overall outbreak response, providing important mapping services to MSF (and other actors) for all of the three most affected countries in the region. The maps provided valuable graphical outputs of demographic, geographic, and epidemiological data, which were openly shared with response partners. These OCG-produced GIS maps are available through a web portal for MSF users (http://mapcentre.msf.org/en/login). This confirmed the value of GIS mapping for MSF; the department could be developed and used for other scenarios.

The POW ETC was seen as the ideal setting to try new treatments and conduct research. However, decreasing numbers of patients and a lack of staff with research training across different levels at OCG limited the execution of some opportunities.

OCG successfully participated in a range of research projects. These included:

- Collaborative research to improve PPE – a trial aimed at providing lighter, cooler and fewer PPE items. The initial trial of new materials did not elicit much change in the experience from the users’ perspective.
- OCG initiated the collation of data concerning Ebola disease clinical sequelae through the services of the Survivors Clinic.
- A survey assessed the impact of reduced health service access on all-cause mortality.
- A study to assess the virus’ persistence in the environment (referred to as the ‘infectivity study’) was conducted at the POW ETC. This OCB-led research identified that the cement/concrete flooring of the POW ETC held active virus after cleaning with regular solution chlorine. This finding was taken into consideration in the decommissioning and decontamination procedures at the closing of the POW site – including prolonged soaking of the cement in stronger chlorine solution. It was proposed that in the future, a specific resin coating should be applied to the flooring of ETCs.

However, trials of the Brincidofovir treatment (in collaboration with Oxford University) were considered too late to implement at POW ETC; patient numbers had decreased and the closure of the site was planned.

A cohort of patients’ clinical record data was collected by trialling the electronic pens/paper system. The system required that the data could only be entered on a specialised paper, with the use of the ‘e-Pen’. The blank forms had to be on a special substrate and could only be printed in Geneva, 50
pages at a time, which impacted the practicality of the tool. Furthermore, the pens did not work as anticipated, and there was limited and slow support from Sertal, the company developing the E-Pen system. The OCG E-Pen raw data is under the control of HQ and is proposed to be available via a data sharing platform.  

There remain research opportunities for which MSF is particularly well positioned to progress.

- Due to the infection prevention and control activities throughout the country, morbidity and mortality among under-fives from diarrhoeal diseases reduced during the course of the Ebola outbreak. Additionally, there was no cholera outbreak, as there had been previous to the Ebola outbreak. Important research would be to identify the culturally appropriate health promotion activities that can sustain these improvements in Public Health in the Ebola-affected countries, and benefit related projects elsewhere.

- Some isolation strategies used in this outbreak lacked evidence. Interviewees explained that “holding centres varied from ‘ok’ to ‘very dangerous’, due to risk of transmission from Ebola cases to non-Ebola cases”, and “…unfortunately MSF, in general, did not feel they had the required evidence to advocate against the use of quarantine” (OCG field staff). A review of the evidence on these isolation strategies could be used to influence future response.

- Other research areas MSF/OCG have an interest to explore with research institutes include: issues regarding viral load; transmission rates; the impact of multiple generations of viral transmission in humans; viral persistence in survivors and so on. Interviewees were not confident that collaborations for such work were being pursued, but felt that MSF had both the data and the interest to be involved.

OCG has suggested a set of research areas which would support work in future outbreak response: “Environmental studies; Biological studies in pregnant and breastfeeding women; Feasibility and accuracy of point-of-care diagnostic tools, such as rapid diagnostic test; Feasibility and acceptability of different strategies of isolation of suspected cases / quick fix measures (individual room)” (Ebola workshop summary, Geneva. Feb 2015).

RESEARCH COLLABORATIONS

“MSF was a bit naive” (OCG HQ staff).

There were many bold steps taken by MSF in this crisis. This outbreak represented the first time MSF was involved in the early experimental stage of clinical trials of therapies. It was the first time MSF was closely involved with outside research actors.

Interviewees confirmed that OCG was open to collaborations with other research institutions. However, identifying the most appropriate links proved difficult as priorities differed. For example, we were told that academics put methods first, whereas MSF put patients before the research aims: “Academics tend to have a focus on RCTs, but excellency in methods and results are not compatible with these contexts” (OCG HQ staff).

The interviewees concluded that MSF should establish closer links with academic institutions away from the crisis situation, through mutual training and research work. Research institutions proposed for collaboration purposes included the London School of Hygiene and Tropical Medicine (LSHTM) and Ecole Lausanne. LSHTM supported MSF in research and the deployment of staff during the outbreak, and would welcome a longer term, formalised collaboration (in interview, LSHTM Directorate). Laurent Kaiser, Hopitaux Universitaires of Geneva, also offered an invitation: “A training

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11 We did not confirm if this is only for internal OCG access, other MSF sections, or selected research institutions.
centre (re lab work) might be considered as a joint project between MSF and our institution” (Hopitaux Universitaires of Geneva).  

MSF could also further develop its sharing of research and monitoring outcomes with other actors. Interviewees at the MoH&S were not aware of any examples where MSF had shared their data or research. This lack of recall does not necessarily reflect reality. OCG staff confirmed sharing their work with the MoH&S, but this may not have been appropriately disseminated within the ministry.

There are opportunities to increase research capabilities for MSF staff being deployed to the field. There is a long-standing arrangement for MSF-OCG staff to complete the Trop-Ed Diploma in Advanced Studies in Health Care Management course at the Swiss Tropical and Public Health Institute, prior to deployment. There may be opportunities for the Institute to offer a short course (e.g. five days) in data collection and research prior to the field deployment of staff. Similar opportunities could be offered to national staff in country.

**MONITORING AND EVALUATION**

“MSF is bad and inconsistent at collecting and compiling data. Outbreak after outbreak the data collection was not done well enough” (OCG HQ staff).

Monitoring and evaluation was a weak point at the POW ETC. Interviewees struggled to give examples of these processes other than the line-listing of patients and their clinical outcomes (data was analysed via the daily EpiCentre line listing). The HP team completed daily report forms which were transferred to computer by the HP supervisor, but no information was fed back to the team; staff were unaware of the use of the data that they collected.

**2.7.2 Conclusions**

The lack of available data does not permit a meaningful analysis of treatment outcomes at different stages of the intervention and in connection with different activity components, such as the developments in community engagement. There are complex confounding factors and secular developments rendering any interpretation of the limited data invalid. The data OCG does have should be made available to researchers who can analyse pooled data sources to learn as much as possible about transmission factors, clinical outcomes and the impact of interventions.

MSF/OCG could have further developed its role in operational research. MSF needs to promote the interests of beneficiaries in academic and corporate research work. This crisis has highlighted the need for improved coordination frameworks, earlier prioritisation and resourcing of research during crises.

- The Medical Directors Board for Research was important for opening opportunities for research decision-making and high-level collaborations. An analogous Ebola Research Platform at OCG level could improve the efficiency, consistency and expert input for identifying and supporting OCG-specific research opportunities, and may include the input of collaborators from research institutions.
- Research response could have been improved by having dedicated research personnel integrated across all levels of OCG/MSF. These individuals could be tasked with the maintenance of data collection tools (standardised spreadsheets, databases), develop pre-deployment research training, develop ToRs and ethical reviews for research projects and identify and manage research collaborations.
- Research proposals needed to be prioritised according to impact and relevance, such as to connect it to the focus of field activities. For example, research aimed at improving
equipment and materials to support field staff in their activities, and research to improve patient outcomes. This will improve the engagement of field and HQ staff in research studies.

OCG has struggled to conduct timely research and analysis of collected data.

- OCG missed the opportunity to initiate or contribute to important operational research, for example regarding enforced quarantine versus robust contact tracing methods.
- The OCG GIS Unit proved that it was able to fast-track an innovative and dedicated tool to support research and the overall response of the MSF movement.

Current research opportunities that include

- Identifying realistic and effective alternatives to the isolation strategies (enforced quarantine) in an outbreak of this scale,
- Identifying mechanisms to efficiently document and collect patient data inside the high-risk ward (eg electronic tablets),
- Confirming Public Health benefits of improved community-level infection control practice and
- Further development of arrangements to share MSF data with research partners to benefit wider research agendas.

Research partnerships are crucial to improve the success of future MSF/OCG research.

- Opportunities for institutional collaborations already exist due to the relationships that were advanced through the Ebola outbreak – such as with HUG and LSHTM. The MSF Luxembourg Operational Research Unit (LUXOR) could also be further engaged.
- There are opportunities to train more MSF staff to conduct operational research in MSF field projects. For example, by developing OCG’s links with the Swiss Tropical and Public Health Institute, which could provide short courses on data collection for research in humanitarian and outbreak settings.

Monitoring and evaluation in MSF is directly related to tracking project progress and achievement of outcomes.

- OCG needs to embed monitoring and evaluation in all OCG activities, particularly in times of crisis. Formal frameworks and physical tools should be developed to improve the ease and quality of data collection and analysis. It will be useful to conduct data collection with research use and guideline development in mind.
- Dissemination of monitoring, evaluation and research findings to staff in the field could increase the momentum for improving the quality of data collection.
3 Discussion and over-arching conclusions

There was an acute need for isolation beds in Freetown when the OCG POW ETC in Freetown was opened. At the invitation of the Ministry of Health and Sanitation in Sierra Leone, MSF-OCG successfully designed, built and opened their flagship ETC at the POW School within 12 days. This was an impressive achievement.

The POW ETC was innovative in design and practice. Patient clinical care was prioritised alongside a strong focus on infection control.

The engagement of the community was recognised from the beginning. Approval for the centre was sought from the local community in advance of construction, and HP staff were recruited locally, strengthening important networks. Trust was built through the transparency of the ETC layout, facilities for visitors and health promotion work within the community. Surveillance, household decontamination, quarantine management strategies and contact tracing activities were poor in the national response. OCG household decontamination actions were of high quality, albeit relatively modest in implementation. MSF-OCG did recognise these gaps and further implemented trainings and support to other NGO partners in this work.

The MSF-OCG response was innovative, dedicated and capable.

However, preparedness for similar outbreaks is required. This evaluation has identified areas for prioritisation.

First, decision-making processes should be efficient and structured - both internally and between Operational Centres. In a major crisis, the burden of decision-making should be shared with the field level with the support of identified groups with specialist expertise, as required. It is at field level that the specific context, the set of available competences and challenges can be most accurately judged. This system should aim for safe, yet accountable, flexibility in operations.

Second, processes to allow the rapid set-up of a Centralised Task Force system should be agreed in advance of future major crises. Defined set-up procedures and operating frameworks, with the legitimacy of all MSF sections, are required for such a structure to operate effectively.

Third, MSF-OCG data collection, documentation and information systems warrant attention. This requires training all staff in the importance of monitoring and evaluation, and the development of standardised data collection and analysis tools. MSF should recruit experienced Information Management personnel (field, HQ and Task Force levels) to support decision-makers. This will ensure the possibility for regular frequent review of indicators, which will result in improvements to MSF practice.

Fourth, capture the MSF combined human capital emanating from this crisis – the Ebola crisis cohort. MSF staff, now dispersed, gained skills in politics, negotiation, crisis coordination, community engagement, media work, construction design, equipment innovation, guideline development, human resource management and so on, which are transferable to a range of MSF activities.

Fifth, investment in staff is needed:

- Across levels of the MSF movement, there is a lack of robust skills in strategic planning, networking, diplomacy, negotiation, management and coordination.
- The role of the Inter-Sectional Liaison and Advocacy Officer, to support and represent a broader range of MSF programmes, has proved to be useful.
- The role of health promoters proved critical in this outbreak and requires professionalisation to ensure more robust health promotion and outreach activities in future outbreaks.
The outbreak management expertise of professional public health practitioners is lacking in the MSF workforce.

Sixth, the successful research collaborations developed during the Ebola crisis offer opportunities for expansion such as with other NGO actors and with research institutions.

Seventh, innovation in MSF activities, while maintaining the tried and proven MSF operational management structures, improved components of patient care and other response activities.

Finally, at a time when global demands on the movement are considerable, MSF should reflect on how to position its valuable contribution in major crises, developing its strategic vision.

The political influence of MSF was challenged early in the Ebola outbreak, when global actors failed to respond to MSF’s International President’s demand for an urgent international crisis response. Echoes of this tension can be observed at more local levels, with MSF-OCG lacking consistent traction (and engagement) with the Ministry of Health and the National Ebola Response Centre in Sierra Leone.

In preparation for the next major crisis, MSF may want to reflect on its remit and develop its mandate and skill base accordingly, to optimise its influence and impact for the future.
4 Recommendations

4.1 Infrastructure

- Establish the structure and function of a Centralised Task Force for crisis response with all MSF sections in advance of another large-scale response. Consider a MSF section to lead in a given country, for major/complex scenarios, to allow for consistent representation with non-MSF stakeholders.
- Design an ‘Ebola Treatment Centre Kit’, drawing on experiences from all MSF OCs, which can be palletised for air-freight/sea containers and deployed for the efficient construction of an ETC. Integrate opportunities to increase the acceptability of the centre for patients/family such as incorporating visiting areas, counselling facilities and ‘cinema showings’ into the ETC design. Increase the capacity for MSF to provide its own independent laboratories, or establish partnerships with mobile lab services with the capability for deployment worldwide.

4.2 Medical care management

- Contribute to guideline development with other actors\(^\text{12}\), incorporating rapid diagnostics, Piccolo and iSTAT equipment for maintaining infection control and monitoring biochemistry.
- Ensure adequate provision of non-Ebola disease support; this may be through partnerships with other MSF sections or NGO/government actors. Include the improvement of (national and international) staff access to mental health support and ensure the capacity to respond to Mental Health needs within the team promptly.
- Develop decision-making structures and procedures to ensure accountability and efficiency in finalising decisions; this structure should support innovation and delegate decision-making to the field according to staff experience and competence, within specified boundaries.

4.3 Epidemiological control measures

- Future interventions should deliver a full outbreak response package encompassing WHS, contact tracing, health and hygiene promotion.
- Implement standardised effective and efficient tools for epidemiological data collection across MSF teams and allow projections to inform MSF strategy.\(^\text{13}\)
- Invest resources in developing capacity in contact tracing for both urban and rural settings to allow OCG to become a leading strategic advisor, or implementer, of the contact tracing processes/mechanism in future outbreaks.
- Develop a cohesive MSF position regarding the use of enforced quarantine in outbreak management, securing evidence to substantiate that contact tracing and the use of voluntary quarantine is more effective and humane than the strategy of enforced quarantine.

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\(^{12}\) Other actors to be considered for collaboration are those that developed clinical guidelines of their own, such as WHO and CDC, and specialist institutions for laboratory and/or relevant university departments.

\(^{13}\) For example, continue the relationship with the Mathematical Modelling Group at LSHTM.
4.4 Community engagement

- Invest in the professionalisation of MSF health and hygiene promotion (HP). Their role can be expanded in future outbreaks, and supported by the early deployment of social scientists and anthropologists with the HP teams. HP and psychologists should accompany all survivors home for family support and stigma alleviation.

4.5 Capacity building

- Train and guide other NGOs on ETC set-up and management, community outreach activities focused on HP and WHS, and contact tracing methods.
- Include the provision of accommodation and meals for national staff, where indicated, for increased capacity and stigma minimisation (scale and context specific).
- In future crises, where MSF has particular unique expertise, develop and manage a web-based platform to share knowledge and make it accessible to other organisations for emerging information, data and protocols.

4.6 Relationships with other actors

- MSF should contribute to national level strategic coordinating bodies to influence policy decisions, and consider MSF’s regional/global strategic advisory roles in future crises. Invest in developing senior staff (field and HQ) skill sets in global health leadership, strategic planning and diplomacy.

4.7 Research, monitoring and evaluation

- Recruit ‘information management’ personnel (field, HQ and Task Force levels) to identify, collate and share data within and outside of MSF for informed decision-making and the enhancement of daily improvements to activities.
- Develop an OCG Research Board for ethics, protocol advice and research prioritisation. This should include – and formalise existing – research institute partnerships (inside and outside MSF, such as DNDi, LUXOR, LSHTM, Swiss Tropical and Public Health Institute).
- Operational research should be integrated from the beginning of outbreak interventions in the future.

*We remember the individuals who lost their lives in this outbreak.*
## 5 Annex

### 5.1 Terms of reference

ToR_draft_V3_21Jul

### 5.2 List of interviewees

<table>
<thead>
<tr>
<th>Title/First name/Last name</th>
<th>Function</th>
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<tbody>
<tr>
<td><strong>Geneva HQ</strong></td>
<td></td>
</tr>
<tr>
<td>Mr Mathieu Soupart</td>
<td>Logistics Director, OCG</td>
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<tr>
<td>Dr Micaela Serafini (by phone)</td>
<td>Medical Director, OCG</td>
</tr>
<tr>
<td>Ms Amanda Tiffany</td>
<td>Epidemiologist, Epicentre/OCG</td>
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<tr>
<td>Dr Iza Ciglenecki</td>
<td>Operational Research Coordinator, OCG</td>
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<tr>
<td>Ms Claire Dorion</td>
<td>WatSan Referent, OCG</td>
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<tr>
<td>Dr Dorian Job</td>
<td>Deputy Responsible of Emergency Cell, OCG</td>
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<tr>
<td>Dr Jean-Clement Cabrol (by phone)</td>
<td>Director of Operations, OCG</td>
</tr>
<tr>
<td><strong>Sierra Leone</strong></td>
<td></td>
</tr>
<tr>
<td>Ms Siham Hajaj</td>
<td>HoM MSF-OCBA (Sierra Leone after POW period)</td>
</tr>
<tr>
<td>Ms Annette Hearns</td>
<td>Director Humanitarian Affairs Officer, OCHA</td>
</tr>
<tr>
<td>Ms Esmee de Jong</td>
<td>ex-MSF HP OCA; ECHO</td>
</tr>
<tr>
<td>Mr Jacob Maikere</td>
<td>HoM &amp; ex- Medco, MSF-OCB</td>
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<tr>
<td>Mr OB Sisay</td>
<td>Director of the Situation Room, NERC</td>
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<tr>
<td>Ms Victoria Parkinson</td>
<td>Western Area DERC/later NERC Advisor (AGI)</td>
</tr>
<tr>
<td>Ms Ali Arnall</td>
<td>Director Advisor NERC (AGI)</td>
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<tr>
<td>Mr Chris Walker</td>
<td>DIFD and UK Stabilisation Unit</td>
</tr>
<tr>
<td>Mr Musa Turay</td>
<td>HP National Staff Team Leader, OCG</td>
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<tr>
<td>Ms JS</td>
<td>Survivor POW ETC</td>
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<tr>
<td>Mr ABK</td>
<td>Survivor and caregiver in POW ETC</td>
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<tr>
<td>Mr Idrissa Aliue</td>
<td>MSF-OCG Base Log (for POW ETC closing period)</td>
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<tr>
<td>OCG National Staff(^\text{14}) (list is extensive; please refer to footnote)</td>
<td>Pharmacists, security guards, drivers, HR, electrician and others</td>
</tr>
<tr>
<td>Mrs Yvonne Aki-Swayer</td>
<td>Director Planning, NERC</td>
</tr>
<tr>
<td>Dr Sandra Lako</td>
<td>Clinical Lead, Welbodi Partnership</td>
</tr>
<tr>
<td>Ms Regina Bash-Taqi Dr Serge Emaleu</td>
<td>Ministry of Health &amp; Sanitation: Health System Strengthening Hub, Transition Lead, Clinical Pillar Lead Others: Planning Officer, Ministry of Health &amp; Sanitation Partner Liaison Officer, Ministry of Health &amp; Sanitation (now in charge of SLA)</td>
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<td>Views collated from: - Philip Amara - Yayah Coteh</td>
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### Focused e-mail interviews

| Dr Marta Lado Castro-Rial with views collated from colleagues | Clinical Lead, Kings Sierra Leone Partnership |
| Mr David Kabbia, and colleagues: Jessica Duffy, Elizabeth Tomenko, Elizabeth Foulkes, Ibrahim Turay, Samuel Hubbard, Daniel Sao-Lamina, Assan Bangura | Handicap International |

### Skype interviews

| Dr Roberta Petrucci | Medical Operations Support Unit, Paediatrics Specialist, OCG |
| Mr Gianluigi Lopes | Ex-Liaison and Advocacy Officer (Inter-Sectional), Sierra Leone; WHO |
| Dr Monica Rull | Operations Health Advisor, OCG |
| Ms Anja Wolz | Ebola Operations Advisor, OCG |
| Mr Michael von Bertele | Save the Children (ex-Director of Humanitarian Operations) |
| Ms Ella Watson-Stryker | HP Activity Manager, OCG |

### Focused interviews

| Dr Henry Dowlen MBE | Chair of Scientific Advisory Committee on Ebola Response to WHO; Director LSHTM |
| Prof Peter Piot | |

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<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tr>
<td>Prof David Heymann</td>
<td>Chair of Advisory Group to Director-General of WHO, on the Ebola Outbreak; Chatham House; PHE</td>
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<td>Prof Marcel Tanner</td>
<td>Chair DNDI; Emeritus Director Swiss Institute for Public Health and Tropical Disease</td>
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<td>Mr Richard Gregory, DFID</td>
<td>Ebola Strategy Team (deployed in Sierra Leone) DFID</td>
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<td>Ms Geraldine McCrossan</td>
<td>GOAL</td>
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<td>Ms Maureen O’Leary</td>
<td>LSHTM coordinating research; NERC</td>
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### 5.3 Sample questionnaire

[Sample Questions - Interview.docx](#)

### 5.4 Ebola Regulated Referral System (v3.1)

[Ebola-Regulated_Referral_System_V3.1.pdf](#)

### 5.5 Proposed plan – *Simplified Ebola 10 bed isolation unit*

[2014 Ebola 10 beds isolation simplified .](#)
5.6 References


7 Sierra Leone Freetown POW ETC Final Report (Anja Wolz)


9 Sierra Leone Freetown POW ETC Final Report (Anja Wolz)

10 2014_week 45 OCA_SITREP

11 confirmed by OCG NS focus group

12 SL - Freetown - week 2 - 12.01 - sitrep

13 SL - Freetown - week 2 - 12.01 - sitrep

14 Sierra Leone Freetown POW ETC Final Report (Anja Wolz)

15 Sierra Leone Freetown POW ETC Final Report (Anja Wolz)

16 Sierra Leone Freetown POW ETC Final Report (Anja Wolz)

17 EoM report of Bernadette Schober, HRCO, 30/06/2015.

18 EoM report - Fran Miller - 14/07/15

19 from EoM report of Bernadette Schober, HRCO, 30/06/2015.


26 “MSF-OCG workshop on Operational and Medical priorities around Ebola, following the 2014-2015 West African Ebola Epidemic: workshop summary and recommendations” (file name: “OCG Ebola workshop summary minutes_1”). MSF. 27 Feb 2015 (Geneva, Switzerland)


30 “MSF-OCG workshop on Operational and Medical priorities around Ebola, following the 2014-2015 West African Ebola Epidemic: workshop summary and recommendations” (file name: “OCG Ebola workshop summary minutes_1”). MSF. 27 Feb 2015 (Geneva, Switzerland)


38 “Project Management MSF Ebola Experimental Product Investigation Platform” – MSF Notes

39 “MSF OCG workshop on Operational and Medical priorities around Ebola, following the 2014-2015 West African Ebola Epidemic: workshop summary and recommendations” (file name: “OCG Ebola workshop summary minutes_1”). MSF. 27 Feb 2015 (Geneva, Switzerland)