19 March 2015

Ebola Outbreak in West Africa

Lessons Learned from Quarantine – Sierra Leone and Liberia

Overview

Summary of lessons learned

- Self-imposed quarantine has proved less problematic.
- The timely and reliable delivery of resources (e.g. food/water) and expertise (e.g. contact tracing/safe and dignified burials) is essential to ensure cooperation and deter quarantine violation.
- The communities' understanding of the benefits of quarantine and its role in stopping the outbreak is essential.
- Coercion is counterproductive.

The Debate

The use of quarantine in West Africa is debated by various stakeholders. Some INGOs have argued that quarantine can fuel panic and counterproductive behaviour. Others have defended quarantine as a vital complementary tool to prevent the spread of infection and facilitate contact tracing. As of the date of publication, there is no available quantitative evidence which proves that quarantine is effective or harmful in West Africa. This document does not intend to promote either side of the debate.

Definitions

As of the date of publication, Sierra Leone quarantines a household[1] if a member of the family is Ebola-confirmed. They remain in quarantine until 2–21 days pass without symptoms, depending on how long they have been exposed, or unless they require isolation as a suspected case (GoSL, 01/10/2014).

In Liberia, this has been expanded to include any contact: exposed, confirmed, probable and suspected cases. They remain in quarantine until: 1) 21 days pass without symptoms; 2) there are two negative lab tests from the original suspected case; 3) an illness consistent with Ebola occurs, requiring isolation.

Quarantine differs from isolation. All suspected and probable Ebola cases are immediately isolated in an Ebola dedicated facility until they receive results from a lab test. There is no debate about the use of isolation.

Sierra Leone

Context

The Government of Sierra Leone initially responded to the Ebola crisis by applying a clinical/curative approach*[2] during May-July 2014. However, following the rapid spread of EVD from Kailahun and Kenema districts (epicentre of the outbreak), a state of emergency was declared by the Government of Sierra Leone on 31 July 2014. Restrictions on movement and public gatherings were quickly introduced. These quarantine measures included self-quarantine, application of Chiefdom by-laws, and government-imposed mass quarantines as high as district level (GoSL, 14/11/2014).

On 19 September Sierra Leone imposed a three-day shutdown intended to limit the spread of Ebola. Pedestrians and vehicles were barred from the country's streets. Authorities in Freetown used this period to search out any Ebola cases or deceased that were being hidden. They discovered 100 bodies and 200 patients. At the time, various actors raised concerns over the methods used by security forces in enforcing quarantines (AFP, 24/09/2014).

On 25 September, following a surge in new cases, Port Loko, Bombali, Moyamba, and several of the poorest wards in Freetown were placed under indefinite quarantine. This, in addition to the districts of Kenema and Kailahun, quarantined in August, placed approximately a third of Sierra Leone's population under quarantine (BBC, 25/09/2014).

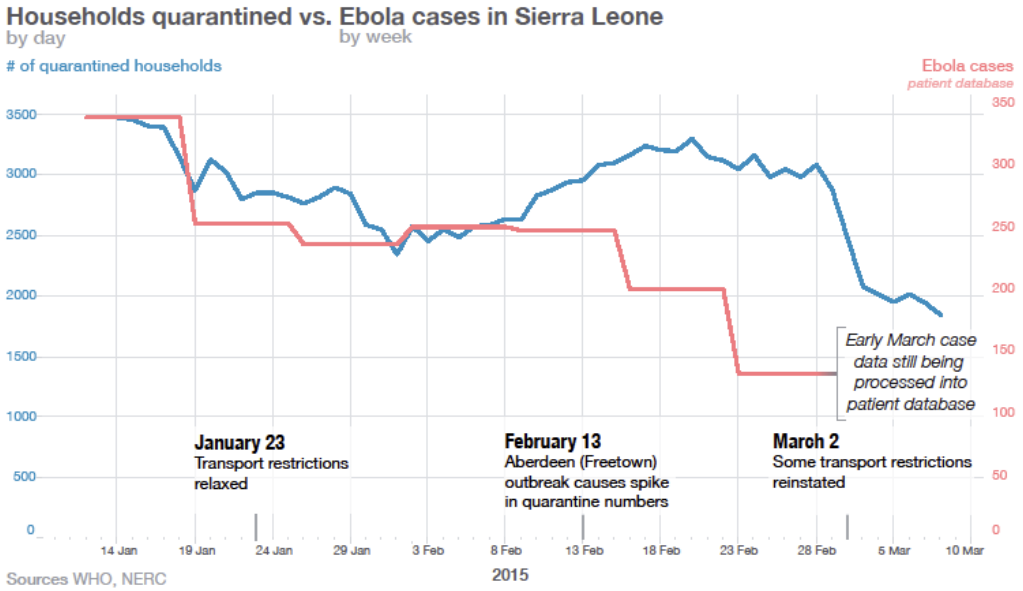
As the outbreak continued, more communities and villages were quarantined at different times. By December, over one million people in quarantine required food assistance from WFP. Movement restrictions helped create food shortages, contributing to a lack of labour, traders and commodities (WFP, 18/12/2014) (See **impact** section below). Throughout this time people continued to violate quarantine in search of basic provisions, as well as from fear of infection (AP, 04/11/2015).

On 23 January, Sierra Leone lifted some of the nationwide restrictions on travel and trade due to declining infection numbers, and all chiefdom and district-level quarantines were removed (AFP, 23/01/2015). However, some checkpoints have been reinstated and transmission rates slightly increased. Public transportation carrying goods are not

[1] Other types of quarantine at Village/Section level and Chiefdom/Ward and District level are applied in SL (GoSL, 01/10/2014).

allowed in Freetown after 1800 hours, and restrictions still apply to the number of passengers carried by vehicles (Government, 02/03/2015).

In mid-February, an outbreak in Aberdeen caused a spike, as 700 households were quarantined by 13 February (see graph below). At present 1,845 households, approximately 10,886 individuals, are under quarantine in Sierra Leone (NERC, 08/03/2015).



Impact

There is a lack of quantitative data which can scientifically conclude the role quarantine plays in reducing the spread of Ebola in West Africa, be it positive or negative. Regardless, there is substantial qualitative and anecdotal evidence which indicates its impact.

Since implementation of quarantine, there have been consistent reports of infrequent distributions of food and water, poorly conducted contact tracing and body management issues, and a lack of adequate sanitation facilities in quarantined areas (UNMEER, 04/03/2015; PI, 06/03/2015).

Contact tracing, according to the best practise established by MSF, should occur daily but not all NGOs responsible for contact tracing are adhering to this guideline, fuelling confusion among coordinators and contacts (PI, 06/03/2015). Whilst the measurement of this has proven difficult (WAERC Quarantine meeting, 2/03/2015), a recent report conducted by MSF in 65 households, its area of operations suggests that almost all are being visited daily (MSF, 18/02/2015). However, the tracer often do not have a comprehensive list of contacts in a household whose status must be monitored (a line list). Therefore, they revert to simply asking if anyone is sick, which enables denial (PI, 17/03/2015).

There are various reports of contact tracers not receiving adequate training and subsequently failing to explain their role to the quarantined families or to share understanding of the disease. This has led to several reports of households becoming hostile to contact tracers, as they continually disturb people's sick relatives without explanation. When the tracer role is explained, their presence in generally accepted (PI, 05/03/2015). Recent results show that only 64% of EVD new cases last week originated from existing contacts, and that figure drops to 44% in the Western Area, which includes the majority of the slums under quarantine (PI, 12/03/2015).

Basic supplies: Due to poor coordination and road access in rural areas, households frequently do not receive food packages within 24 hours of being placed in quarantine (UNMEER, 01/02/2015) and there have been incidences of households waiting 48 hours (NERC, 08/03/2015). In recent weeks in the Western Area the delivery of first packages has improved, though the delivery of supplies for the remainder of quarantine remain and issue (Ground Truth, 16/03/2015). Furthermore, although it is generally recommended that food should be distributed once a week during the 21 days of quarantine, different approaches from some organisations has created confusion among community members (WAERC Quarantine Meeting, 02/03/2015). There are also complaints of food being spoiled or out-of-date. The poor supply and quality of food has also been linked to the majority of quarantined homes reporting some sort of health problem, including eye and skin infections (MSF, 18/02/2015). Additionally, insufficient non-food items have been delivered, which has added another level of frustration not conducive to community engagement (PI, 17/03/2015).

Food security: In December 2014 and in 2015, reports suggest that, while food availability was down "The results of the survey indicated no clear relationship between reported stocks levels/food availability and quarantined areas" (FEWSNET, 31/12/2014). However, according to a recent report on food security, due to the pre-existing high level of poverty and a food insecurity, households that experienced the quarantine have been impacted more seriously. This is partly because they have experienced a higher reduction in income. Therefore some are already facing critical levels of food insecurity, just two months after the main harvest. Concerns are now being raised about the ability of the quarantined to recover and prepare for the planting season as the lean season (August), approaches (Oxfam SL, 17/3/2015).

Employment levels saw similar declines in quarantined and non-quarantined districts (World Bank, 12/01/2015). There is still no consensus on what the impact has been. The combination of forced quarantine and unemployment may have contributed to a surge in the reported number of rapes as well as teenage pregnancies (IRIN, 04/02/2015).

Removal of corpses was still not always taking place from quarantine areas as late as November, increasing the chance of transmission dramatically (International Media, 10/2014).

Slums: Stakeholders have only recently raised the issue of slums having specific quarantine requirements (PI, 4/3/2015). Due to lack of space, households cannot be quarantined individually, so responders place the whole community in quarantine. Issues relating to food/water distribution, livelihoods, and WASH facilities are more challenging. Frequently, there are no improved latrines. Where there are proved latrines, they are often shared between the quarantined and non-quarantined (Ground Truth, 16/03/2015). The capacity to improve conditions is hampered by lack of space or the high water table, which increases the likelihood of groundwater becoming contaminated (PI, 03/03/2015). All of these conditions are exacerbated during the rainy season.

Additionally, the low incomes in most slum areas, and the most common income activities, are unstable even during times of stability. This makes the residents of slums particularly vulnerable to the effects of quarantines on livelihoods. Health and education services are similarly fragile, due to the low pre-crisis levels in these areas (PI, 03/03/2015).

Moreover, as the population in these areas are more likely to have poor relations with the existing government, social mobilisation has been stunted by a greater distrust of authority figures than in other areas (PI, 03/03/2015).

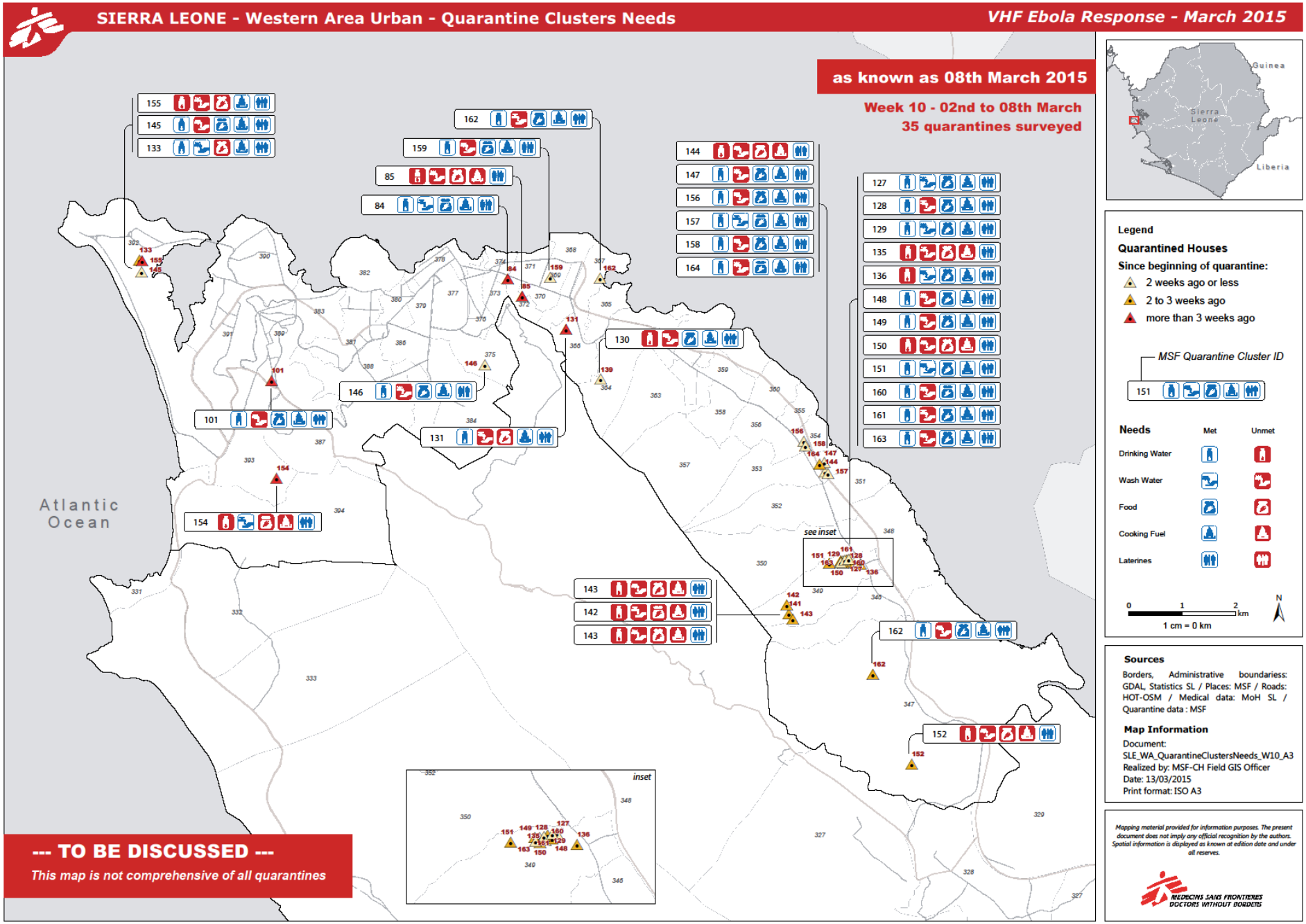
Improvements and challenges

There is an indication that some conditions are improving. For example, WASH improvements in quarantines are being prioritised in order to meet water and sanitation needs. In addition to this, efforts to improve social mobilisation have been made (PI, 13/03/2015). A study has indicated that significantly fewer people hold discriminatory perceptions of survivors and the quarantined (38% of respondents) (FOCUS1000 CDC UNICEF, 01/12/2014). Also, as case numbers fell, more laboratories were constructed and faster tests developed, so the waiting time on lab results was dramatically decreased.

However, challenges remain. Front-line responders still sometimes fail to provide adequate information and feedback to communities (about family members in treatment, grave sites, food in quarantine, etc.) (PI, 13/03/2015). It has been noted the knowledge of the population may has increased but it has not changed behaviour. This is because there is little trust in the system, a fear of losing income and of becoming unable to care for sick family members (IMC, 01/12/2014), the likelihood of discrimination (Ground Truth, 16/03/2015), and the threat of becoming contaminated. This fuels denial, the hiding of corpses, and escape attempts (PI, 5/2/2015). The abovementioned study from December found that only 56% of respondents had a comprehensive understanding of Ebola. Only 79% of suspected EVD bodies are being picked up within 24hrs, and 85% are being picked up within three days (National Strategy on Community Engagement, 10/03/2015).

There is also a concerning discrepancy between the perception of local frontline workers of why people do or do not violate quarantine, and the reasons given by the affected communities. Surveys indicate that among local frontline workers in Sierra Leone, over 75% believe that high security standards is the main reason why people respect quarantine (Ground Truth, 18/03/2015). However, a different survey conducted over the same period found that the main factor most often cited as helping people stay in quarantine was support from the community (Ground Truth, 18/03/2015). This difference in perception indicates a failure of responders to communicate with and consider the needs of the affected community, which is vital in order to build the trust.

All these issues have contributed to the large number of people violating quarantine and has led some commentators to address the economic, social and cultural elements that fail and question the efficacy of quarantine in general.



* This map does not represent all quarantined areas. It only indicates areas surveyed by MSF during the course of their normal activities. It indicates reported issues and more generalisable trends, but does not present a comprehensive survey of needs across Sierra Leone or the Western Area

Liberia

Context

At the beginning of the outbreak, the Liberian Government imposed quarantine more quickly than Sierra Leone. Liberia declared a state of emergency on 7 August. By 11 August, the counties of Bomi, Lofa, and Grand Cape Mount were under quarantine (AFP, 11/08/2014).

On 20 August, the curfews were extended and the West Point slums in Monrovia were completely sealed off. This sparked violent clashes between security forces and West Point residents, in which live ammunition was used, dozens were injured, and one killed (AFP, 20/08/2014). Following the unrest and reports of people violating quarantine in search of basic provision, many forced quarantines were lifted or relaxed. The West Point quarantine was lifted after ten days.

On 8 September the Government relaxed its night-time curfew and lifted its quarantine in certain areas to increase access, particularly in an Ebola hotspot near the country's international airport (AFP, 08/09/2014). Though several other areas continued to be quarantined, and reports of security personnel using force continued throughout the outbreak, the authorities' approach began to rely less on coercive measures(WFP, 26/09/2014).

In September, Task Forces were set up in districts and engaged with local communities, involving leaders, like the West Point Elders, to help implement and structure quarantines (UNDP, 25/11/2014). There was a greater reliance on 'self-quarantine,' based on reports and decisions from the affected community. This was seen to improve conditions, although there are reports of local community members denying access to water and other basic provisions to quarantined contacts (PI, 14/03/2015; UNMEER, 30/11/2014).

New contact numbers continued to decline in 2014 and into 2015. In response, on 22 February, the night-time curfew was officially lifted (AFP, 20/02/2015), and the Government reopened its borders with Sierra Leone and Guinea, which had been closed since 29 July (the Guinea and Sierra Leone sides remain officially closed) (UNMEER, 23/02/2015).

At the beginning of March, there were 102 contacts in Liberia, although new suspected cases are believed to have been underreported, partly due to people's fear of their families becoming contacts and quarantined (PI, 07/03/2015).

Whole communities are no longer quarantined. Responders are now attempting to negotiate the terms of quarantine on an individual basis with each new contact though concerns are still raised over reported incidents of forced or unsafe quarantine by the Government, or threats from the local community (PI, 14/03/2015). This is exemplified by the case of a group of young males allegedly coerced into an ETU scheduled for decommission after one died under suspicious circumstances in Monrovia (PI, 20/02/2015).

Impact

Liberia experienced many of the same effects of quarantine as Sierra Leone, though substantial data is lacking and impact severity has differed. Food and water prices increased (and there was sharp decline in market food supplies, particularly to rural areas relying on imports coming through Monrovia, with 25–50% of traders in several districts reporting inadequate supplies (WFP, 28/09/2014; WFP, 05/11/2014; FAO, 02/09/2014; FEWSNET, 07/01/2015). This, combined with travel restrictions, led to a higher rate of unemployment, particularly in the agriculture sector, which was the primary source of income for 48.9% of the labour force during the outbreak (World Bank, 2013).

Safe sources of water also became scarce in quarantined areas (Water Missions International, 03/09/2014). These problems were exacerbated by Liberia's dysfunctional transportation and seasonally inaccessible roads.

The above issues, as with Sierra Leone, dramatically improved as contact numbers declined and the capacity of responders increased in proportion to the number of individuals quarantined.

Stigmatisation has been a persistent problem throughout the outbreak (UNMEER, 11/01/2015). Although social mobilisation has improved knowledge of the outbreak, a recent Oxfam protection assessment involving 800 respondents, including community and religious leaders, generally said that quarantine brings shame and stigma on people (Oxfam, 04/03/2015). There are also persistent issues with infected bodies being transported and unsafe burials being conducted (All Africa, 29/12/2014).

The initial quarantines, particularly in the first few months until September, were poorly imposed (AFP, 07/09/2014). There are routine reports of residents of quarantined areas bribing soldiers to let them through the barricades (New York Times, 12/10/2014). There are continuing reports that security personnel poorly implement movement restrictions, using minimal or ineffective means (PI Save the Children, 13/03/2015). Contact tracing has been recognised as poor, and there is disagreement about how much it has improved.

Improvements and challenges

The Government of Liberia and other sources have stated that training of contact tracers has improved since September, and that a combination of recruitment of motivated volunteers and well-incentivised tracers have been a major factor in the transmission rate decreasing (PI,12/03/2015, PI, 14/03/2015). Several other independent sources from INGOs have commented that the contact tracers were ineffectual, due to continued poor training (PI, 12/03/2015), and one source stated that the uniform, inflexible model of contact tracing led to un unnecessary numbers of contact tracers and case investigators (PI, 13/03/2015).

Lessons Learned

Community-led self-imposed quarantine was considered by all sources interviewed to be the most important factor deciding the success of a quarantine. In Liberia, it is reported that quarantine has been most effective not at a district or individual level, but at a community level, orchestrated by local and religious leaders (PI, 14/03/2015). This has been crucial to minimising violations of quarantine as well as to the tracing of contacts and discovering of new cases, including corpses. One source described how, even when the security forces proved unreliable to maintain travel restrictions, a quarantine can be maintained if the restrictions are self-imposed and new cases and suspicious activities are reported by the local community (PI, 13/03/2015). For example, Task Forces set up in September, and engagement with community leaders to help implement and structure quarantine, were seen to improve conditions.

There have been variations in how communities have implemented the quarantine. There are reports of local community members denying the quarantined contacts access to water and other basic provisions, while other communities provided water deliveries independently and at personal expense (UNMEER, 30/11/2014). One source commented that communities they observed in Liberia communities were heavily involved in searching for information about Ebola patients and linking families in quarantine with sources of information (PI, 17/03/2015).

The timely and reliable delivery of resources and expertise was cited as an intrinsic part of building community engagement. The ability of responders to react to the requirements of the quarantined community, and to reliably bring provisions (e.g. food, water, cash, information), is a vital element in not only ensuring continued cooperation and limited human suffering, but also deterring violations of quarantines. Furthermore, the supply of skilled practitioners who are able to provide the necessary expertise and resources to remove bodies safely and train contact tracers has been important. The actual improvement in contact tracing over the course of the outbreak, however, remains debatable (PI, 13/03/2015).

One source stated that responder's capacity to provide for quarantined communities dramatically increased after September 2014 due to the arrival of more international support. Moreover, the sources suggest that as Liberia received a great deal of international attention and is smaller than Sierra Leone, the proportional increase in its capacity may have been greater (PI, 12/03/2015).

Behavioural change at the community level, but also among responders, made a positive impact. At a community level, the shift from denial to acceptance of the existence or causes of Ebola has been a major factor in communities imposing and cooperating with quarantines. Two major factors in the behavioural shift have been social mobilisation efforts and the evident impact of the outbreak. The increased international presence and resources have helped social mobilisation efforts.

Dissemination of information has been vital to combating stigmatisation, and also denial (PI, 13/03/2015). However, several independent sources indicate that, as more of the population witnessed the impact of Ebola first-hand or had relatives who became infected, the denial of its existence and resistance to the international response decreased (PI, 14/03/2015; PI 13/03/2015; 12/03/2015). It has been suggested that it was this fact more than any external effort that increased community engagement and behavioural change (PI, 13/03/2015).

Coercion has come to be viewed as counterproductive by various sources. After the negative repercussion and failures of West Point and the other large-scale forced quarantines predominantly orchestrated by the military in August, the Liberian Government and responders moved away from mass quarantine. One source said that "remember West Point" became a watch word among stakeholders (PI, 14/03/2015). Some INGOs have argued that force breaks down the trust required for social mobilisation and community engagement, which were key components of successful quarantines (PI, 04/03/2015). There are strong indications that this perception shift has not occurred in Sierra Leone, least of all among local frontline workers, and that it is necessary to begin the community-led approach and behavioural change (Ground Truth, 18/03/2015).

Information Gaps

- Substantial, publicly available, qualitative data.
- Proven effectiveness of quarantine approach.
- Proven effectiveness of the current contact tracing systems in both countries.
- The differing experiences of urban and rural quarantine.
- The long-term impact of quarantine on WASH facilities.
- The long-term impact of social mobilisation and behavioural change on non-Ebola-related health practices and the relationship between the Government and population