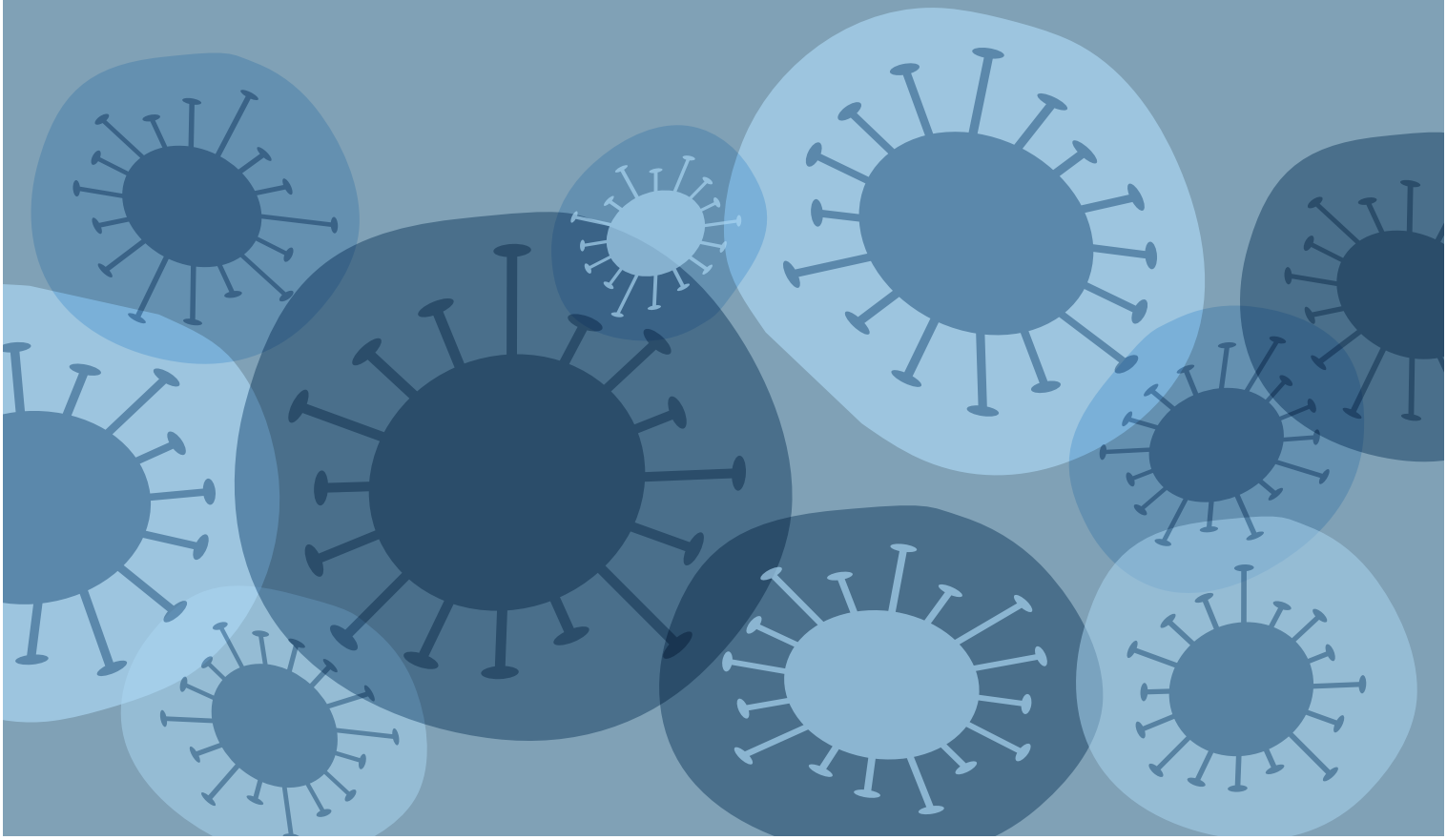
Responding to Ebola epidemics

An ALNAP Lessons Paper

Gentiane Lamoure and Hélène Juillard



LESSONS PAPER

ALNAP

ALNAP is a global network of NGOs, UN agencies, members of the Red Cross/ Crescent Movement, donors, academics, networks and consultants dedicated to learning how to improve response to humanitarian crises.

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Contents

Abbreviations and acronyms

ALNAP	Active Learning Network for Accountability and Performance in Humanitarian Action
CCC	community care centre
DRC	Democratic Republic of the Congo
ETC	Ebola treatment centre
ETU	Ebola treatment unit
HIV/AIDS	human immunodeficiency virus infection and acquired immune deficiency syndrome
ICRC	International Committee of the Red Cross
IDP	internally displaced people
IFRC	International Federation of the Red Cross
MSF	Médecins Sans Frontières
NGO	non-governmental organisation
PPE	personal protective equipment
SARS	severe acute respiratory syndrome
SDB	safe and dignified burials
WASH	water, sanitation and hygiene
WHO	World Health Organization

Introduction

Despite the eradication of major infectious diseases such as smallpox in 1979, 'epidemics [of infectious diseases] are occurring more often, and spreading faster and further than ever, in many different regions of the world' (WHO, 2018: 11). The emergence of large-scale epidemics (such as Ebola, HIV/AIDS, SARS and, even more recently, COVID-19), the re-emergence of old diseases (such as tuberculosis and haemorrhagic dengue) and the persistence of epidemics of controllable diseases (such as measles, cholera or malaria) have led national governments and global institutions to consider epidemics as some of the most serious major public health emergency threats for the 21st century (ibid.). Since 2010, both medical and non medical humanitarian actors have been increasingly involved in the response to major outbreaks.[1]

In 2014, a major outbreak of Ebola Virus Disease (EVD) started in Guinea and spread across West Africa. Although it was not the first Ebola outbreak in history – humanitarian actors have been responding to Ebola outbreaks since 1976 – it was the largest ever recorded, with more than 28,000 cases and at least 11,000 deaths. This particular outbreak also exposed significant weaknesses in the humanitarian sector's response to epidemics and received large international attention, owing to the risk to Western countries posed by international travellers. The humanitarian response to the West African outbreak, and the lessons learned from it, have been comprehensively documented. The humanitarian responses to the Ebola outbreaks in the Democratic Republic of the Congo (DRC) between 2017 and 2020, which have been attempting to build on the lessons from West Africa, are also generating new lessons learned.

This lessons paper aims to inform future humanitarian responses to Ebola, acting as a guide for humanitarian practitioners. Some of its findings – such as the lessons on coordination, funding and economic recovery – may also be transferable to responses to other epidemics.

The paper seeks to answer the following research question:

What lessons for humanitarian practitioners can be drawn from the responses to the Ebola epidemic outbreaks since 2014?[2]

It reviews relevant grey and published literature to draw lessons related to this research question. The primary audience of ALNAP's Lessons Papers are humanitarian practitioners[3] and, in the case of this paper, non-health specialists.

The lessons explored in this paper originate from past humanitarian

assistance across sectors. Humanitarian assistance is defined here from an anthropological perspective, using the definition provided by Atlani-Duault and Dozon which states "there is humanitarian aid quite simply when groups claim to implement humanitarian action and organise to this end an intervention apparatus applying to other social groups" (Atlani Duault and Dozon, 2011: 400). This aid is commonly that which "seeks to save lives and alleviate suffering of a crisis affected population" (ReliefWeb, 2008). For the purpose of this paper, epidemics are defined as "the occurrence in a community or region of cases of an illness, specific health-related behaviour, or other health-related events clearly in excess of normal expectancy" (WHO, n.d.).

The next section details the methodology used to extract the lessons learnt and the subsequent sections discuss the lessons, which are organised according to four main facets of an Ebola response: (1) healthcare, water, sanitation and hygiene (WASH) and body management; (2) health communication and community engagement; (3) effects of the Ebola response on non-health issues; and (4) coordination and funding. The research team identified these four facets from common themes emerging in the literature and in discussion with Delphi members.

Methodology

This lessons paper is the result of a structured review of available literature, with searches conducted in November 2019 and June 2020.[4] The methodology used is aligned with the one described in Lessons Papers: A Methods Note, developed by the ALNAP Secretariat in 2017 (Dillon and Campbell, 2018). An inception report was prepared by Key Aid Consulting and reviewed by ALNAP in October 2019. Its purpose was to ensure the rigour of the literature review, while maintaining an inclusive approach to the evidence produced by the humanitarian system. A detailed breakdown of the methodology can be found in the Annex to this paper.

The paper's scope is limited to responses to Ebola epidemics. This is due to the system-wide nature of the lessons arising from this epidemic; while dangerous, other epidemics, such as measles, typically warrant significant responses but rarely require cross-sectoral activities on the same scale. In addition, lessons learned from Ebola responses have significantly been more explored than responses to other diseases (such as cholera or other viral haemorrhagic fevers such as Marburg).

This paper relies on a wide variety of documents (such as academic articles, evaluation reports and lessons papers) published since 2014 that cover the major Ebola outbreaks in West Africa (2014) and the DRC (2017, 2018 and 2018–2020). The intention was initially to cover cholera outbreaks as well as Ebola, but the research team decided not to include cholera-related content as the large majority of literature identified during the review covered only Ebola and most of the lessons learned were specific to Ebola.

It intentionally excludes lessons related to epidemic *preparedness*,[5] but does look at surveillance, detection and response. Some lessons in this paper may be applicable to other humanitarian response (e.g. the importance of adequately capturing socially ascribed roles for men and women), but they have still been included since they were described in the literature as having a specific importance for Ebola outbreaks.

As this paper is aimed primarily at humanitarian practitioners, the authors have attempted to highlight actionable lessons, presenting both the issue and potential solution (or solutions) that humanitarians in previous situations have identified. Nonetheless, in some cases, no solutions were found, or they were not present in the documents analysed. For this reason, not all lessons in this paper offer potential solutions.

The literature review followed a rigorous screening process to determine which documents were eligible. Using search strings defined in relation to

the research question, the authors identified a total of 21,851 records from a list of relevant databases (see the Annex for the full list of search strings and databases). Based on their titles and abstracts, the authors excluded 21,450 studies that were irrelevant to the research question. The remaining 401 studies were then recorded in the reference management software Zotero, and another 6 documents were added through backward citation searches or as shared by experts. From this list of 407 studies, 91 duplicates were identified and excluded. The authors screened the full texts of the remaining 316 documents: 27 documents were not accessible, and these were excluded along with a further 104 studies that featured no lessons[6] or were beyond the scope of this paper.

From the 185 remaining documents, data was extracted, and relevant information coded using a data extraction matrix (see the Annex for the data extraction tools), before moving into the quality appraisal phase (see the Annex for the quality appraisal tool). The quality appraisal tool included criteria for qualitative, quantitative and mixed-methods studies (Langer et al., 2014). To reduce the risk of bias, 5% of the first batch of studies were appraised by both the research analyst and the epidemiologist in the team to compare results and ensure consistency in ranking.

A significant number of qualitative studies obtained a poor score after quality appraisal (the average score is 36 of a possible 100). This is explained by the fact that many studies were lessons papers, which aimed primarily to be accessible, rather than to demonstrate methodological rigour. All 185 papers included did, however, state that they were based on primary data collected from project intervention stakeholders (such as crisis-affected people, implementing agencies and local authorities) or on secondary data reflecting the views of these actors. The authors decided not to exclude any study based on quality criteria: as recommended in ALNAP's Methods Note, quality appraisal in the humanitarian sector should not be used as a way to exclude documentation, but rather as a way to assess the strength of the evidence base. The quality levels assigned to each lesson in this paper thus refer to the quality of the evidence for this lesson, relative to the quality of all 185 documents assessed for this paper. The lessons rated 'high quality' are of relatively high quality as compared to the average quality across all 185 papers.

The authors used the different papers to triangulate emerging lessons learnt and to ensure reliability of the analysis. Each lesson begins with a problem statement and seeks to explore what humanitarian organisations have considered as best practices to overcome challenges or mitigate risks. The research team also critically reflected on the lessons, ranking them according to how frequently they appeared in the literature, their relative quality score and their prioritisation by the Delphi group (see the following 'Confidence rating' section). The authors used a system similar to that used by an earlier ALNAP Lessons Paper, *Responding to Earthquakes*, which also graded both the breadth of the evidence base and the quality of it. This methodology was likewise derived from the recommendations in Dillon and Campbell (2018). The only distinction in this paper is that the three scores

for breadth (the lesson's frequency, priority and quality) have not been combined. This is to allow for a more critical review by the reader; while the quality of the documented evidence base may be low, value can still be attributed to a lesson due to its frequency in the literature and whether experts see it as a priority.

The Delphi method

The way in which the research team described and compiled the identified lessons in this paper is the result of collaboration between methodological experts and thematic experts. To improve the relevance of the lessons learned, consultants used the Delphi method to synthesise and prioritise a raw list of lessons harvested from the literature review. To translate the findings into actionable recommendations, practitioners who have participated in Ebola responses in West Africa and the DRC have been included in the process to review the lessons. The Delphi method is used to generate ownership, ensure a collaborative approach to harnessing evidence and generate consensus by relying on a panel of experts. Here, the approach was used to gather inputs from a range of experts and practitioners on Ebola outbreak responses to:

- mitigate researcher bias in the synthesis of lessons
- add lessons or literature that had been missed
- ensure that lessons were relevant to the decision-making context of Ebola outbreaks
- make where possible identified lessons specific and action-guiding, based on consensus across a representative body of experience.

The lessons drawn from the literature review were submitted to a group of **26 experts**, representing different sectors and organisations, who have direct (that is, hands-on) or research experience of Ebola responses, both in West Africa and the DRC. These experts were identified according to their sector of expertise and experience in Ebola responses. The experts ranked the lessons in order of priority, according to their own experiences. The research team endeavoured to include experts from national organisations and national governments, especially as lessons drawn from the literature are mostly written by foreign actors.

The Delphi process involved two rounds: the first round presented the experts with a long list of 45 lessons; and the second round presented a refined list of 22 lessons. The experts were asked to rank the lessons from 5 (very high priority) to 0 (not a relevant lesson). They were also asked to add any new lessons they thought were missing, to suggest relevant literature and to give examples from their personal experience to illustrate the lessons. Details on the Delphi process can be found in the Annex to this paper.

Confidence rating

To help readers understand the quality and breadth of the evidence supporting the lessons, the authors have assigned each lesson a three-part confidence rating:

- How frequently the lesson appeared in the reviewed literature,[7] where 1 = low frequency, 2 = medium frequency, 3 = high frequency and 4 = very high frequency.
- The average relative quality score of all documents used or cited in that lesson,[8] where 1 = low relative quality, 2 = medium relative quality, 3 = high relative quality and 4 = very high relative quality.
- The average ranking of priority among Delphi participants (using a five-point scale),[9] where 1 = low priority, 2 = medium priority, 3 = high priority and 4 = very high priority.

The detailed methodology for the scoring the lessons and the scoring matrix are available in the Annex.

LOW FREQUENCY
(lesson appeared in 4 to 7 of the total 185 papers)

MEDIUM FREQUENCY
(lesson appeared in 8 to 11 of the total 185 papers)

HIGH FREQUENCY
(lesson appeared in 12 to 17 of the total 185 papers)

VERY HIGH FREQUENCY
(lesson appeared in 18 to 24 of the total 185 papers)

LOW RELATIVE QUALITY
(quality score between 0 and 18)

MEDIUM RELATIVE QUALITY
(quality score between 19 and 36)

HIGH RELATIVE QUALITY
(quality score between 37 and 64)

VERY HIGH RELATIVE QUALITY
(quality score between 65 and 100)

LOW PRIORITY
(Delphi ranking average score below 3.50)

MEDIUM PRIORITY
(Delphi ranking average score between 3.51 and 3.99)

HIGH PRIORITY
(Delphi ranking average score between 4.00 and 4.49)

VERY HIGH PRIORITY
(Delphi ranking average score between 4.50 and 5.00)

A health worker goes through a rigorous process as they get dressed in protective gear at an Ebola Treatment Centre. Credit: European Union.

Lessons learnt

A // Lessons on healthcare, WASH and body management

LESSON 1

Healthcare workers and volunteers should be provided appropriate resources and wages, as well as psychological support

HIGH FREQUENCY: 16 papers

HIGH RELATIVE QUALITY: Average score: 39%

VERY HIGH PRIORITY: Average Delphi ranking: 4.62

Key recommendations from the literature and practitioners include the following:

- Provide staff exposed to the virus with adequate personal protective equipment and training
- Ensure adequate living conditions for staff working in Ebola treatment centres
- Advocate for payment of appropriate salaries and hazard pay of health workers
- Provide psychological support to healthcare workers and volunteers.

The safety of healthcare workers should be central to managing any epidemic, as they are at the frontline of every response. The Ebola virus is transmitted through close and direct physical contact with infected bodily fluids, and so anyone who touches an infected person risks contracting the virus themselves. In the West Africa Ebola Outbreak, many healthcare

workers lacked personal protective equipment (PPE) and appropriate training on its use and on infection prevention and control (IPC) (Grünewald, 2015). This led to hundreds becoming infected (and dying) in West Africa (Piot et al., 2019). Beyond the tragic human death toll, this unsafe environment reduced healthcare workers' motivation (ibid.) and further hampered the response.

Appropriate living and working conditions were not consistently provided for staff in Ebola treatment centres (ETCs) and community care centres (CCCs) in West Africa. For instance, CCCs in Sierra Leone did not always have sleeping quarters (Abramowitz et al., 2016). Facilities for staff should be adapted to the context and adequate for them to obtain enough rest in such a stressful environment (Adams, 2016). Appropriate work schedules with days off are also essential.[10]

Governments should systematically provide direct and fair payments to national healthcare workers. The timely and appropriate payment of these salaries has been problematic in the West Africa outbreak (WHO, 2015). In Liberia, for instance, healthcare workers went on strike during the epidemic to protest both the government's failure to pay salaries and the lack of hazard pay (IRC, 2016a).

The West Africa Ebola Outbreak took a high psychological toll on healthcare workers, who were subjected to intense fear and stigmatisation (also see Lesson 14 on psychological effects of Ebola). Addressing the psychological needs of frontline workers, including by providing psychological first aid, should be part of any effort to improve the healthcare systems of countries affected by epidemics (IRC, 2016b). Frontline staff should be given access to psychosocial support (Ripoll et al., 2018). One way to do so is to add this to staff support budget lines (YMCA, 2016).

The extent to which healthcare workers, and especially burial workers, are accepted and trusted by the community is a paramount success factor of any Ebola response. One way to boost their acceptance is to use workers in their areas of origin (Morlai, 2017). At the same time, one member of the practitioner's panel raises concerns for volunteers who worked in their own communities:

> In Sierra Leone, the Red Cross volunteers who worked in burial teams faced stigmatisation and ostracisation in their own communities. Some were not able to stay in those communities during the hight of the outbreak. The IFRC, working with the [Sierra Leone Red Cross], had to provide them with extra support, including housing in separate locations, to ensure their safety.[11]

All of these recommendations also apply to volunteers, who are at the centre of the Ebola response, involved in community engagement, social mobilisation, contact tracing and safe burials. Tens of thousands of Red Cross volunteers (who far outnumbered international workers) responded in Guinea, Liberia, Sierra Leone and the DRC, risking their lives and facing stigma and discrimination (IFRC, 2016). As volunteers in

a healthcare-related response, they are at higher risk of contamination and stigmatisation, while being expected to show empathy (Ripoll et al., 2018) and not receiving promised hazard pay (Herrick and Brooks, 2020). Providing psychosocial support to these volunteers should also be incorporated in Ebola responses (Ayoo et al., 2016).

Addressing the psychological needs of frontline workers, including by providing psychological first aid, should be part of any effort to improve the healthcare systems of countries affected by epidemics

Examples from the practitioners' panel (edited)

"During my time as Community Engagement Specialist in Sierra Leone, most volunteers were not given any psychological support, especially the burial teams and social mobilisers. As a result, there was a high turn-over of volunteers and other paid health workers. Some of this is attributed to pressure and stigma from relatives, friends and neighbours; I believe that if sufficient resources and psychological support had been provided, it would have helped to minimise staff turnover."

Program Director, IDHA

"In the DRC, decontamination and burial teams' PPE items were constantly breaking. There was a lack of facilities for field teams (change area, latrines, showers), and limited transport, which resulted in passengers and materials and waste being transported in the same vehicle."

WASH specialist, UNICEF

LESSON 2

WASH is a fundamental pillar of an Ebola response, especially with regards to infection prevention and control, body management, community engagement, and promotion of health-seeking behaviours

MEDIUM FREQUENCY: 9 papers

MEDIUM RELATIVE QUALITY: Average score: 34%

MEDIUM PRIORITY: Average Delphi ranking: 3.92

Key recommendations from the literature and practitioners include the following:

- Ensure adequate IPC measures are in place in health centres and ETCs to avoid nosocomial infections
- Promote IPC through community engagement to avoid Ebola and other diseases transmission, to lower the burden on the health system
- Pay specific attention to how Ebola responses can exacerbate WASH vulnerabilities for populations and address them by giving equal access to WASH facilities.

WASH activities go hand in hand with any infectious disease response and Ebola is no exception. EVD is transmitted through close and direct contact with body fluids but transmission risks can be minimised by changing behavioural practices. Ebola prevention is strongly linked to the proper management of the bodies of people who have died from the disease. WASH is therefore an essential component of safe burials, and significant quantities of properly chlorinated water are required.

Poor infection prevention and control measures in health centres in West Africa put healthcare workers and burial teams at risk of catching Ebola while caring for patients. This resulted in nosocomial spread (that is, hospital-acquired infection) between patients in health facilities (ACAPS, 2016). In the DRC, about 5% of infections occurred among healthcare workers, and the incidence of nosocomial infections was also high in private and traditional health centres (Mobula et al., 2020). The primary focus of WASH responders is to ensure appropriate WASH standards in healthcare facilities, including 'carrying out Infection Prevention and Control protocols, as well as the provision of water supply and sanitation to patients, and the safe, if not environmentally friendly, disposal of waste, medical and otherwise' (ACAPS, 2015a: 16).

Beyond these healthcare facilities, one of the major tasks of the WASH sector in Ebola responses is promoting infection prevention through community engagement. A focus on handwashing outside of health centres is primarily important because it prevents transmission of many pathogens that can have overlapping symptoms with Ebola. Preventing diarrheal

diseases, for instance, lowers the burden on the health system overall and on the Ebola response (also see Lesson 12).[12] The WASH sector can also face community resistance, particularly concerning hygiene practices and safe burials (ACAPS, 2015a). Lessons on community engagement can be found in Lesson 6 and Lesson 7.

The WASH response is also driven by public health indicators that are decided in coordination with the health sector and by evidence production on how WASH actions have impacts on health indicators. Links between humanitarians and the academic sector are a helpful way to share research on how to improve the WASH response to Ebola, which in turn can generate evidence on how to appropriately design WASH infrastructure to stop the spread of Ebola.[13]

Beyond IPC promotion, the WASH sector focuses on improving access to water, sanitation and waste management (ACAPS, 2015a). In general, an Ebola response should not overlook the extent to which response activities can exacerbate existing WASH-related vulnerabilities. There is a clear disparity in WASH indicators between rural or slum areas, and more prosperous urban areas (ACAPS, 2015a). For example, in Sierra Leone, 15% of Freetown's available water was used by the ETCs, to the detriment of those households already struggling to access water (Campbell, 2017a). In addition, special attention should be given to populations in quarantine, as quarantines have resulted in large waste disposal needs and other WASH vulnerabilities (Campbell et al., 2017).

Example from the practitioners' panel (edited)

> **"The Ebola treatment unit (ETU) in Katwa was one of many examples of how the Ebola response relied on already (very) constrained access to WASH infrastructure. During its construction, a water tap for the community to use was also installed."**
>
> ICU Doctor, ALIMA

LESSON 3

Burials should be conducted by trained and specialised teams, who should also adapt safe burial practices to the deceased's relatives' cultural and emotional needs

MEDIUM FREQUENCY: 9 papers

MEDIUM RELATIVE QUALITY: Average score: 35%

HIGH PRIORITY: Average Delphi ranking: 4.46

Key recommendations from the literature and practitioners include the following:

- Ensure appropriate PPE and IPC conditions for burial staff
- Adapt the burial to ensure that, as well as being safe, it fulfils the deceased's relatives' needs to see the body and organise a ceremony led by the appropriate person
- Include families and relatives in the organisation of safe and dignified burials.

Because Ebola is a highly transmissible disease that occurs through being in contact with a contaminated person's body fluids, burying people who have died from Ebola is an extremely dangerous activity that carries a high infection risk. Burials should therefore be conducted by trained and specialised teams, with appropriate IPC conditions and PPE.

However, burials are also an important cultural practice and a necessary step in the mourning process. During the Ebola Outbreak in West Africa, a significant amount of the community resistance revolved around responders' failure to adapt safe burial practices to relevant cultural norms. Families and relatives of the deceased were not always permitted to see the body, and religious ceremonies were sometimes prohibited or could not take place due to the high number of deaths. Bodies were sometimes wrapped in black body bags, more commonly seen in the global north; in West Africa, white is the colour of mourning.[14] The lack of consideration for the deceased person's relatives had deep psychological consequences, causing great distress and preventing emotional closure (Morlai, 2017).

By adapting safe burial practices to 'safe and dignified burials' (SDB), which considered the ceremonial cultural needs and is a recognised good practice in body management, responders saw an increased in community acceptance of the safety measures necessary to avoid Ebola transmission (Baggio et al., 2019; Grünewald and Maury, 2020).

The literature provides practical recommendations on how to practice appropriate burials, taking into account both the safety of relatives and burial teams, and the cultural and emotional needs of the deceased person's relatives.

First, responders need to understand the context's customary body preparation and burial practices. This includes identifying who is in charge

of which tasks and how social structures impact who is responsible for preparation and burial (Ripoll et al., 2018).

Second, responders should include relatives in the burial procedures (Kasali, 2019), by discussing with them how to adapt the burial practices in a context of Ebola. These practices are not static, as communities understand the risk of transmission. However, families are best placed to suggest appropriate adaptations and should where possible be offered the option to pick the burial location (Bedford, 2018a). Every step of the process should be fully explained to the relatives and only carried out with their prior agreement (Park, 2020). They should be given the ability to personalise the often standardised SDB process by, for instance, placing in the grave the deceased's personal effects (as opposed to burning them) (Bedford, 2018a).

Third, responders can create an opportunity for relatives to see the body from a safe distance. For instance:

> In West Africa, MSF treatment centres included a viewing area where family and friends could see the body of the person who had died from a safe distance. Later, morgues were developed with large plexiglass windows so that family and friends could stand very close to the body of their loved one while remaining protected.[15]

Fourth, burial teams should include people who already play a role in funeral ceremonies and who are well known among the local community. These people should receive training on safe burial practices, even if they are not necessarily among those who perform the burial itself; instead, these individuals can play a valuable role by liaising between the burial team and the family (Ripoll et al., 2018; Bedford, 2018a).

Examples from the practitioners' panel (edited)

> **"When I worked on a case study on Risk Communication and Community Engagement in the DRC, many informants mentioned that, in the beginning, SDBs were done without involving family members. During that time, a lot of rumours were circulating in the community around organ trafficking, sorcery, etc."**
>
> Research Consultant, ODI

> **"During one of my community engagement meetings in the DRC, I personally witnessed a situation where a burial was not conducted in a way that the family deemed appropriate. As a result, the family exhumed the dead body, with the support of traditional leaders and the security personnel who were guarding the graves, to conduct an appropriate ceremony, putting themselves at high risk of infection. This could have been avoided by using an SDB approach in the first place."**
>
> Program Director, IDHA

B // Lessons on context, communication and community engagement

LESSON 4

Epidemic surveillance and case detection efforts should be based on local contexts and community involvement

LOW FREQUENCY: 6 papers

MEDIUM RELATIVE QUALITY: Average score: 30%

HIGH PRIORITY: Average Delphi ranking: 4.38

Key recommendations from the literature and practitioners include the following:

- Identify communities early warning systems
- Engage community members to conduct case detection and contact tracing.

Reponses to Ebola outbreaks have been criticised in the literature for adopting top-down approaches to surveillance and detection (Ripoll et al., 2018), which increased mistrust and discouraged collaboration for different aspects of the response. The literature identifies a number of recommendations to better involve communities in surveillance and detection efforts.

It is important to recognise communities as experts of their own contexts, and to acknowledge their ability to detect and monitor disease outbreaks. Ebola responders should understand the context in which they are operating (as linked with Lesson 8). First, this involves identifying particular patterns of infection. For instance, who is involved in bushmeat hunting and trading? How do communities detect epidemics, and especially Ebola, in places where it is a known disease? What vocabulary and idioms are used to identify Ebola? Second, it involves identifying and using the early warning and alert systems that are already being used to help detect Ebola locally (Ripoll et al., 2018).

As a result, community members should be at the forefront of Ebola outbreaks' surveillance and detection, with adequate support from the international community. Community members, if sufficiently trained and supervised, are often better trusted than outsiders to detect Ebola cases and make referrals (Adams et al., 2015). Engaging local volunteers for contact

tracing has also proven to be successful in many areas in West Africa (Murray et al., 2015). Lastly, watch groups at the local level have also played a role in helping the communities themselves to monitor the epidemic situation (Thomson and Bolton, 2014).

In urban spaces, where innumerable interactions may take place every day, contact tracing and surveillance efforts become even more difficult. Here, community-level surveillance and self-reporting has proven more useful than external monitoring of behaviours (Campbell, 2017b).

LESSON 5

Health communication should prioritise messaging and methods that are inclusive, culturally appropriate and trusted

VERY HIGH FREQUENCY: 23 papers

HIGH RELATIVE QUALITY: Average score: 45%

VERY HIGH PRIORITY: Average Delphi ranking: 4.85

Key recommendations from the literature and practitioners include the following:

- Communicate transparently on key health messages and the state of the epidemic
- Use culturally appropriate means of communication, according to each context
- Engage trusted messengers to convey health messages
- Ensure inclusive communication going through representatives of each group and using languages understood by all groups
- Conduct two-way communication and feedback, to ensure appropriate response to people's information needs.

Even more so than in other emergency settings, two-way communication is at the core of an epidemic response. To foster populations' trust, engagement and behavioural change, communication must relay key health messages (how to prevent infection, what to do in case of suspected infection), answer societal questions (where does the disease come from, is it real, etc.) and be transparent about the level of scientific knowledge and uncertainty.

Communication should be context sensitive and use locally and culturally appropriate means. Radio has proven to be a successful way to spread information and sensitisation messages in West Africa and the DRC, since it is a trusted source with broad coverage (ACAPS, 2015b). Social media such as WhatsApp groups can also be a way to convey messages quickly to a large number of people in urban areas, where a majority of the population has access to the mobile network (Peyton et al., 2019; Sustersic,

2015a). Face-to-face communication is also one of the preferred means of communication (Laverack and Manoncourt, 2016; Campbell, 2017a).

When engaging communities, the messenger can be as important as the message. Working with communities to spread health-related messages has proven effective. For instance, faith leaders are usually trusted sources of information in the community. Building on their knowledge of the local context and traditions, they can be appropriate messengers to convey information related to the epidemic and health-seeking behaviours (ACAPS, 2015b; Featherstone, 2015). Engaging local artists for 'edutainment' has also helped spread health messages in both West Africa and the DRC (ACAPS, 2015b; Alcayna-Stevens, 2018).

It is important to engage multiple community members with different social roles. Selecting the appropriate people to engage should be based on who is best able to serve as outreach workers, their competencies, principles of trust and opportunities to provide equal access to information. For instance, community sensitisation should not rely only on male representatives, and the language used should be accessible to all community members, taking into account the distinct vulnerabilities of women and men (ACAPS, 2016; Alcayna-Stevens, 2018).

Language can be a barrier to accessing reliable health information. Several local languages may be used in many countries, but foreign aid workers tend to speak only the languages of the elites – which in the context of West Africa and the DRC is French or English. These languages are not spoken by all groups of society – especially among less educated or rural populations. For instance, in Sierra Leone, only 13% of women understand

UNICEF coordinators and volunteers using illustrations to help educate people about the Ebola outbreak. Credit: World Bank.

English (Fink-Hooijer, 2015); in Goma, DRC, most people understand Congolese Swahili but not French or standard Swahili, especially true among women and older people (Peyton et al., 2019). By using the local language for community engagement, responders can help to ensure that everyone understands and thus has access to the same level of information (YMCA, 2016). Specific medical terms for the Ebola response in French should be translated and explained in plain language, using words and concepts with which communities are familiar (TWB, 2019).

Indeed, when engaging communities, particularly those with lower levels of health literacy, responders should avoid complex biomedical terms. Showing rather than explaining can be a better way to convey information (Bedford, 2018b). For example, exhibitions of ambulances in villages has helped to lessen people's mistrust of medical teams (ACAPS, 2016). ALIMA's Ebola Cube (a movable treatment chamber made of transparent tarpaulin) allowed people to watch the treatment in real time.[16]

All epidemics come with fears, rumours and conspiracy theories. During the Ebola outbreak in West Africa however, the lack of transparent communication from humanitarian organisations fuelled these fears and rumours. For instance, at the beginning of the outbreak in West Africa, people were seeing their relatives be taken away to ETCs and never coming back. Many studies showed that people were afraid of PPE and chlorine, or thought that Ebola was not real and was invented to abduct people and test drugs on them (ACAPS, 2015b). Reassuring communities by showing them how chlorine is made or showing movies about what happens in ETCs has also been successful in countering rumours (Carter et al., 2017a).

Good practice example 1: Addressing community trust in Liberia through transparency

'In one instance, the organisation received feedback that community members living near a treatment unit were concerned about the smoke rising from an incinerator, giving rise to a rumor that bodies were being burned there. After learning of the rumor, the organisation removed a tarp that had blocked the community's view of the incinerator, enabling passersby to see that the organisation was burning contaminated materials, not bodies.'

Source: Fast and Waugaman (2016: 76).

Early, accurate and transparent information is critical to helping people understand the risks of the disease and available health services. It is also important that responders acknowledge that health communication methods may need to evolve as they learn more about the disease and need to provide updates; this in turn further builds trust (ACAPS, 2016; Ripoll et al., 2018). Although radio and social media are trusted means of communication, they can also accelerate the spread of misinformation and rumours. In Liberia, an SMS platform was used to track, detect and manage

rumours. The rumours were analysed, and new messages were developed to counter misinformation and shared through media and community engagement (Fast and Waugaman, 2016).

Overly negative messages such as 'Ebola kills' or 'There is no cure for Ebola' are unhelpful as they fuel fear and rumours, create stigma and deter people from seeking treatment (DuBois and Wake, 2015; Campbell, 2017a; Carter et al., 2017a. It is also important to avoid messages that have specific negative consequences for certain groups. For instance, the focus on banning bushmeat stigmatises and leads to loss of business opportunities and food insecurity for the Twa ethnic group in the DRC, who rely on bushmeat trade to sustain their livelihood (Alcayna-Stevens, 2018). It is more useful to spread messages on how to reduce transmission and to seek treatment. For example, the 'Ebola Must Go' campaign in Liberia encouraged people to maintain behaviours that were meant to protect close family members (Czerniewska and White, 2020). In Liberia and Sierra Leone, SMS campaigns from faith leaders relayed messages of hope (Fast and Waugaman, 2016).

Communication should be two-way: responders can learn from communities what types of messages work best (ACAPS, 2015c) and what types of concrete information they need (for instance, how to provide care for relatives), and have the opportunity to respond to questions by community members (Niederberger et al., 2016). Feedback loops are also important in countering misinformation (Fast and Waugaman, 2016).

Examples from the practitioners' panel (edited)

"In 2014, MSF gave trainings to over 800 community health workers in Kailahun, Sierra Leone. This enabled local people who were already known and trusted in their communities to share accurate information. If they encountered problems or questions they were not trained to answer, they could obtain immediate assistance from an MSF doctor, epidemiologist, or other specialist."

Humanitarian Representative, MSF

"The Red Cross community engagement programme in Sierra Leone used new and multiple communication methods tailored to different groups. The Red Cross developed a soap opera, which allowed for mass communication primarily targeted at those living in urban settings with access to electricity. The Red Cross also broadcasted a radio show with a call-in number, which gave listeners a place to ask questions and share concerns."

Head of emergency operations, IFRC

LESSON 6

Top-down solutions are insufficient; the Ebola response should be owned by families, relatives, local leaders and local health agents. These actors should be recognised as experts in their own contexts

VERY HIGH FREQUENCY: 23 papers

MEDIUM RELATIVE QUALITY: Average score: 32%

HIGH PRIORITY: Average Delphi ranking: 4.31

Key recommendations from the literature and practitioners include the following:

- Recognise that families, relatives, local leaders and local health workers are at the forefront of any Ebola response and the first at risk.
- Acknowledge people's capacity to understand and adapt to the health situation, and recognise their expertise.
- Engage them through initiatives such as CCCs which ensure a more locally owned response.

Despite repeated lessons from all humanitarian crises on the importance of bottom-up approaches to supporting crisis affected communities, a major mistake of the Ebola responses in both West Africa and the DRC (2014–2020) was the top-down approach. International team members replicated technically sound activities across countries without necessary consideration of the context or of communities' inputs. They failed to involve communities in all stages of the response, from design to exit. A key lesson from these experiences, particularly in eastern DRC, is that a health response is social as well as technical and cannot be planned and implemented solely by health workers and humanitarian professionals

Community involvement should go beyond mere inclusion. Humanitarian responses need to remember that relatives and neighbours are the epidemic's first responders: they are the ones detecting cases and caring for the sick, and potentially putting their own lives at risk. The power to stop epidemics rests with the affected population and it was ultimately their engagement that decreased transmission during the Ebola outbreak in West Africa (Wilkinson et al., 2017).

Assuming that public health experts have all the knowledge and that local populations have none prevents communities from being able to provide valuable inputs. Local knowledge has often been scorned by external actors when, on the contrary, it should be part of the response. For example, understanding the role of local healers and working with them to convey proper health messaging may be more effective than simply ignoring them (Fearon, 2015; Polygeia, 2016). The importance of local leaders or faith leaders was recognised late in the West Africa and more recent

DRC responses. Yet, in the absence of other care, these people are often the first to provide support (such as psychological support) to affected families, including those placed in quarantine or survivors (Featherstone, 2015).

Good practice example 2: Community ownership through participation in DRC

In the DRC, MSF took communities' requests into account in the design and architecture of the ETC buildings. This increased their feeling of ownership of these centres. When feeling sick, people were more willing to go to the centres and seek treatment which, in turn, reduced the number of cases in these communities.

Source: MSF (2020).

As in all humanitarian responses, it is essential to involve communities in all stages of the intervention, and to collect and respond to their feedback so as to gain trust and increase the relevance of the response. This is particularly important – and challenging – in an Ebola response, where misinformation and rumours – common to all outbreaks but particularly present for lethal diseases such as Ebola – combined with a top-down approach by agencies because of the high politicisation of the response, can lead to distrust and a refusal to follow public health measures. Involving community members allows humanitarian organisations to adapt activities to the needs of that community and to address information gaps (Baggio et al., 2019). For instance, in Sierra Leone, communities were highly distrustful of distant ETCs, as patients were taken away by strangers and often never came back. Based on communities' feedback, the introduction of community care centres (CCCs) at the village level, where communities knew the staff and where their relatives went for treatment, largely contributed to increasing their trust in the response (Pronyk et al., 2016; Carter et al., 2017a; Ebola Gbalo Research Group, 2019).

Examples from the practitioners' panel (edited)

"In Sierra Leone, involving traditional authorities, religious leaders and council members led to proactive, preventive measures at the community level. People took the initiative of restricting their own movements, mounting check points, and tracking movements to allow for contact tracing. The involvement of the community members minimised community transmission."

Program Director, IDHA

"In our ETU, 80% of the staff members were from the region (North Kivu in the DRC). This strongly contributed to our response in Beni. We never experienced any security problems, which allowed us to provide services uninterrupted."

ICU Doctor, ALIMA

LESSON 7

Community engagement should not be one-size-fits-all. Communities are not homogenous, and responders should understand contextual power relations between groups to ensure a community-led response that is inclusive and relevant to all

LOW FREQUENCY: 6 papers

MEDIUM RELATIVE QUALITY: Average score: 34%

HIGH PRIORITY: Average Delphi ranking: 4.46

Key recommendations from the literature and practitioners include the following:

- Recognise that 'communities' are not homogenous and carry complex social relations
- Identify different groups and who can best represent them, and consult them separately
- Involve anthropologists and social scientists to understand communities' dynamics.

Communities are not a homogenous entity. As Wilkinson et al. put it, 'community is an invitingly non-specific term. It carries a sense of grass-roots collegiality which obscures social complexities and power relations' (Wilkinson et al., 2017: 5). The people who external responders may consider to be representative of the 'community' may not truly embody all the groups and structures within it. Knowing which local leaders represent different groups ensures more comprehensive inclusion and avoids perpetuating exclusions. For example, in Sierra Leone:

> Although communities were involved in Ebola interventions, specific roles for government health workers; traditional healers and herbalists, as well as Mammy Queens (female community leaders), imams, and priests were not identified by the organisations working in Port Loko. Rather, community consultations had been limited to working with village chiefs.
>
> *(Carter et al. 2017b: 33)*

Responders must identify different key groups. For instance, relying exclusively on male leaders excludes women (see Lesson 9 on gender aspects of the Ebola response). Different faiths may coexist in the same community, and therefore different faith leaders should be included. Younger and older people have different strengths and needs and should therefore be consulted separately. Local elites are often prioritised

as messengers but do not represent all groups within the community (Niederberger et al., 2016).

Understanding social structures and power relations within communities is not only useful from a community engagement perspective, but it also helps to ensure equitable access to health services. Certain groups within a specific context may not have the same resources and may face different challenges to accessing health services and information (Ripoll et al., 2018). For instance, the Twa in DRC often face discrimination, including at health facilities. As such, they are less likely to seek treatment at a biomedical health centre and may prefer going to traditional healers (Alcayna-Stevens, 2018; Duda et al., 2018) (see also Lesson 5 on communication and barriers to access to information).

It may be necessary to include anthropologists and social scientists in the response to understand the social dynamics and power structures within 'communities' (Niederberger et al., 2016; Wilkinson et al., 2017).

LESSON 8

The political, sociological and economic context in which an outbreak occurs should be considered when designing and implementing an Ebola response. It is useful to be aware of population's legitimate frustrations and being sensitive to people's feelings and other competing needs

VERY HIGH FREQUENCY: 20 papers

HIGH RELATIVE QUALITY: Average score: 39%

HIGH PRIORITY: Average Delphi ranking: 4.20

Key recommendations from the literature and practitioners include the following:

- Understand the historical, political, sociological and economic context at national, regional and local level
- Be aware of legitimate fears and frustrations among the population, which can lead to acts of resistance, instead of blaming people for not following health recommendations
- Focus on people's competing needs outside of Ebola.

Epidemics do not happen in a vacuum. They have specific implications according to a country's history, political system and culture. Any response, particularly involving non-local responders, must therefore understand and be sensitive to the context. Although this focus on context may not seem a priority in an emergency setting, ignorance of it can lead to a counterproductive Ebola response.

In both West Africa and the DRC, there are examples of populations having resisted the Ebola response, often due to mistrust of authorities. These acts of resistance are not solely due to culture and traditions, but they should be considered in light of the country's political, social and economic history.

> Political origins of mistrust in Guinea and in eastern DRC have explanatory power in both contexts. In both countries, corruption scandals and expropriation of mining resources by foreign business interests set the stage for suspicion of the government and of outsiders.
>
> *(Masumbuko Claude et al., 2019: 14)*

In eastern DRC, the Ebola outbreaks occurred amid conflict, a national election and political unrest. Populations expressed impatience both with external actors who have been present in the region for more than two decades (during which life conditions have not seemed to improve) and with their own government, which appears incapable of containing the conflict in the region (Vinck et al., 2019; Rohan and McKay, 2020). In certain cases, this mistrust has been further compounded by high levels of corruption among local and national elites.

In the DRC, local populations perceive Ebola as just one more disaster among many others facing them, such as other diseases, conflict and structural poverty (Baggio et al., 2019). The major priority of people living in the conflict zones in eastern DRC is to end the violence that is so prevalent in the region (Kasali, 2019). Instead, resources seemed to have been diverted to the fight against Ebola. Moreover, additional resources for the outbreak were highly visible – vehicles, wealthy non-local[17] aid workers in comparison to poorly paid local health workers. As a result, some aid recipients consider the response inappropriate compared to the populations' needs (Kasali, 2019; Masumbuko Claude et al., 2019).

There is also a perception among humanitarian workers and populations in the DRC that funds to fight Ebola have been diverted for personal gain, as they are distributed unequally among elites and local workers (Rohan and McKay, 2020). Certain authorities at the local and national levels may even be benefiting from the continuing outbreak, and there is evidence that misinformation was deliberately circulated for political gain, especially in election periods (Sweet and Bedford, 2018). In addition, these funds may indirectly be funding armed groups through local elites and, as a result, fuelling the ongoing conflict (Rohan and McKay, 2020).

The question of trust is essential in an epidemic: if populations do not trust the responders, they will be less likely to seek the treatment these responders provide and are more likely to engage in acts of resistance. This in turn can increase the rate at which the disease is transmitted (Sweet and Bedford, 2018). Populations who already face discrimination are even less likely to trust their government. This is the case, for instance, for the population in West Point, Monrovia, which is a stronghold of the government's opposition and was put under forced quarantine (Campbell, 2017a), or for the Twa (Duda et al., 2018). It is also the case for the

Nande people in the DRC,[18] who have a long history of being targeted by government-sponsored violence. People are also less likely to trust foreigners in contexts where conflict has taken place or is ongoing and involves international actors (Kasali, 2019).

The importance of the loss of public support cannot be underestimated, as it has devastating effects on the response. In the Ebola epidemic in the DRC, ongoing at the time of writing, hostility towards ETCs and healthcare workers has risen every time an armed group attacked and when the government postponed the December 2018 elections (Wells et al., 2019; Kraemer et al., 2020). Ebola responses therefore should be empathetic and sensitive to people's feelings and competing needs.

Yet a common mistake made by external (that is, non-local) Ebola responders has been to blame local populations for failing to follow restrictions that would reduce transmission, such as conducting unsafe burials and touching the deceased bodies, distrusting biomedicine, or spreading rumours and false information (Calain and Poncin, 2015). Responders should not assume that people do not understand health-related messages. Rather they may have stronger competing needs – cultural, social, economic or psychological, for example – that prevent them from changing their behaviour (Czerniewska and White, 2020).

When safety measures to prevent the spread of a disease clash with culture practices, culture usually wins (Campbell et al., 2017). For instance, the social obligation to care for sick relatives, older people or the dead made the 'no touching' messaging from health responders unrealistic for targeted populations (Abramowitz et al., 2017). Similarly, and cutting across

Families go the Ebola Treatment Center to visit a family member who is held in quarantine in the centre. Photo: World Bank/Vincent Tremeau.

cultures, the natural desire to be surrounded by relatives when sick led to a continuous population movement that the response largely overlooked (Onoma, 2016; Campbell, 2017b). It is equally unrealistic to expect people to allow their children or family members to be taken away by strangers to faraway treatment centres, from which no one returns (Ebola Gbalo Research Group, 2019).

The blame for populations' distrust of biomedicine should also be avoided. In some rural areas, or amongst oppressed groups, structural barriers such as distance, the lack of services, or gender roles (women needing permission from the male head of the household to go to a health facility, for instance) are the actual barriers to biomedical services (see Lesson 7 on inclusiveness) (Bedford, 2018b).

Responders should also be aware of how Ebola messaging can threaten certain groups' livelihoods and food security (see also Lesson 16) (Peyton et al., 2019). For instance, the focus on how hunting and consuming bushmeat was to blame for initially spreading the Ebola virus to humans not only distracted from the real culprit of human-to-human transmissions but also further marginalised the Twa group, who rely on bushmeat hunting and trade to make a living and feed their families. Instead of messaging that assigns blame or inadvertently stigmatise any particular group (also see Lesson 5 on communication), responders should focus on providing populations with the tools they need to protect themselves while also maintaining their livelihoods (Wilkinson and Leach, 2015).

Example from the practitioners' panel (edited)

> **"Some actors in the DRC did not adapt their implementation with an understanding that the government is a party to the conflict. When this happens, political considerations can overshadow medical needs and good practices. There are many armed groups operating in the area and allegiances can change rapidly. We make a serious mistake if we think that community engagement is the solution to reducing violence when the community is not in fact, the main driver of violence. Understanding the full context at the national, regional, and local levels is essential for all people responding to an outbreak, especially in a conflict setting."**
>
> Humanitarian Representative, MSF

LESSON 9

Gender roles have specific consequences in the context of Ebola. The response should make sure that all gender groups are equally heard and involved in all aspects of the response, including decision-making.

HIGH FREQUENCY: 13 papers

HIGH RELATIVE QUALITY: Average score: 54%

HIGH PRIORITY: Average Delphi ranking: 4.23

Key recommendations from the literature and practitioners include the following:

- Understand how social dynamics affect gender roles and what impact that has on different groups (and especially women and gender minorities) in the case of an Ebola outbreak
- Talk to women separately to understand their specific needs
- Give women decision-making roles and recovery tools that align to their specific needs.

Socially ascribed gender roles have specific consequences for women in the context of Ebola. First, women's role as caregivers has exposed them to a higher risk of infection, which the West African response did not take into consideration. Women have a predominant role in the domestic sphere, taking care of children, older people and the sick (Alcayna-Stevens, 2018), and preparing and burying the deceased in certain regions (Diggins and Mills, 2015).[19] As Harman notes:

> Because these roles are informal and assumed because of gender norms over what women's work is and what men's work is, such care roles are conspicuously invisible in international public policy-making: people know they exist, that women are over-represented in them, yet women are invisible in global health planning, strategy and implementation beyond the role of women as mothers.
>
> *(Harman, 2016: 11)*

The lack of consideration for women's specific needs during Ebola outbreaks has been a significant oversight. For instance, in West Africa, the World Health Organization's (WHO) 'Ebola Response Roadmap' never accounted for women's specific needs (Harman, 2016).

Humanitarian responders should be careful not to perpetuate stigmatizing gender roles and to give equal decision-making power to men and women, while acknowledging women's specific vulnerabilities due to their ascribed gender roles. Part of the Ebola response in West Africa failed to recognise the importance of women's roles in society, with some

programmes reducing them to their role as mothers, which trivialised and diminished their involvement in the response (Carter et al., 2017b). The response in West Africa also became militarised (see Lesson 10 on the involvement of the military), further excluding women from participating in the response by creating traditionally masculinised spaces of decision-making (Carter et al., 2017b; Minor, 2017). On the contrary, empowering women through training and knowledge sharing on health practices and economic recovery has been an effective practice (Batilo Momoh et al., 2016).

Lastly, women bear a disproportionate share of the economic impact of Ebola, as they are more present in the sectors most affected by the outbreaks. This includes activities such as informal trade and agriculture (UN et al., 2015; Androsik, 2020). Recovery strategies should also take these inequalities into account (see Lesson 16 on the economic impacts of Ebola).

A gender-sensitive response cannot only rely on male representatives. Data should be disaggregated by gender, and women should be consulted separately so that they have adequate space to express their needs (Sheperd et al., 2017; Bedford, 2018b; Cook et al., 2018). One possible way of ensuring that women are included is to ask 'Where are the women?' when designing the programme strategy (Harman, 2016). Vulnerabilities for specific groups within each gender should also be considered: for example, older women may have different needs than younger women, and indigenous women may experience more discrimination (Bedford, 2018b).

LESSON 10

The involvement of the military (either foreign or domestic) should be considered very carefully. Military troops can play a significant role in providing logistical support to the response, but their involvement can also be seen as coercive, and thus may be counterproductive

MEDIUM FREQUENCY: 8 papers

MEDIUM RELATIVE QUALITY: Average score: 23%

HIGH PRIORITY: Average Delphi ranking: 4.23

Key recommendations from the literature and practitioners include the following:

- Advocate to limit the involvement of military forces to logistical support
- As much as possible, respect the guidelines on armed escorts to humanitarian convoys.

Military troops can play a vital role in a response's logistical support when other local actors are unable to provide such support. For instance, the US and UK militaries provided large-scale support to the construction of ETUs in Sierra Leone and Liberia (IRC, 2016a; Nevin and Anderson, 2016). However, their involvement has been counterproductive in some instances: for example, the US military in Liberia lacked the capacities to undertake epidemiological work (Nevin and Anderson, 2016), and an audit of the UN Mission in Liberia (UNMIL) found worrying hygiene standards in facilities used to provide treatment to the local population (Davies and Rushton, 2016). Even worse, their involvement is often seen as coercive at the community level (IRC, 2016a) (see also Lesson 11 on quarantine).

Involving armed forces in the delivery of aid also has negative consequences for humanitarian principles as it can 'undermine the perceived neutrality of humanitarian assistance' (Davies and Rushton, 2016: 429). For instance, in the DRC, the national armed forces were used to escort ambulances and burial teams and were stationed outside treatment centres.[20] The national armed forces and police were also deployed to provide security for the vaccination campaigns against the backdrop of an armed conflict to which they were themselves a party. However, this situation has instead increased the population's already low levels of trust in the response (Grünewald and Maury, 2020). Guidelines on the use of armed escorts for humanitarian convoys exist but have not always been followed.[21]

Given these concerns, responses should consider the involvement of military (either foreign or domestic) carefully in each context.

Examples from the practitioners' panel (edited)

"Some INGOs in eastern DRC told me that they were working in certain areas prior to the epidemic and were used to negotiating access with communities (essentially based on acceptance). But following the Ebola response and the coordination's/leadership's mismanagement of the security situation, these NGOs can no longer access the areas where they have historically been intervening, thereby erasing years of humanitarian work and gains."

Research Consultant, ODI

"The military's involvement was counterproductive in most communities during the response in Sierra Leone. The involvement of foreign troops was especially bad, as they lacked contextual understanding and refused to take advice from locals, who felt undermined. This escalated tensions in some communities."

Program Director, IDHA

C // Lessons on Ebola's effects on healthcare, mental health, protection, education and livelihoods

LESSON 11

Epidemic control measures should be implemented in a way that protects the health, safety and dignity of individuals and communities

MEDIUM FREQUENCY: 10 papers

LOW RELATIVE QUALITY: Average score: 16%

HIGH PRIORITY: Average Delphi ranking: 4.23

Key recommendations from the literature and practitioners include the following:

- Encourage self-quarantine rather than enforced quarantine
- Support individuals and communities placed in isolation or quarantine with appropriate resources, including food, WASH and information
- Support livelihoods of those placed in isolation or quarantine.

A lesson that appears to have been forgotten from multiple Ebola responses is that coercion, including coercive quarantine, is counterproductive. For Ebola, quarantine (of an asymptomatic population or individual to prevent the virus's spread) is a political strategy and is not necessary from a medical perspective. Isolation (of an individual with symptoms) is necessary during an Ebola outbreak, as the disease is transmitted by bodily fluids through human-to-human contact. The goal of isolation is to isolate the virus while the infected person is being cared for.[22] Both quarantine and isolation measures carry their own risks.

Firstly, the military-enforced quarantine and isolation in West Africa were problematic in terms of psychological effects and human rights (see also Lesson 10 on the military) (Calain and Poncin, 2015; Campbell et al., 2017). Imposing quarantine and forcing people to seek treatment in ETCs amplified fear and suspicion surrounding the Ebola response, increasing barriers to treatment and encouraging myths about the safety of ETCs, where people believed their relatives were mistreated (Campbell, 2017a). The punitive approach used in Sierra Leone – where curfews, heavy fines and prison sentences were imposed on people who hid sick relatives or conducted secret burials – placed the blame on communities, instead

of using more productive methods like positive communication and encouraging self-monitoring (Oosterhoff and Wilkinson, 2015; Minor, 2017) (see also Lesson 5 on communication).

In addition, quarantines have created difficult economic losses for populations already living in poverty and have had a significant impact on urban populations in particular (Campbell, 2017a). The example of the mass confinement of West Point, a slum area in Monrovia, Liberia, shows how counterproductive quarantines can be. West Point residents had no choice but to break the quarantine and attempt to get around the soldiers – putting themselves at risk – in order to find resources to survive, since the government did not supply any (Hoffman, 2016) (also see Lesson 8 on political context). As a result, such quarantines can force the population to resist, which may in turn increase transmission of the disease.

The literature shows that encouraging self-quarantine has proven more effective than forcing it, especially when such encouragement comes from a trusted local or faith leader (ACAPS, 2016; Laverack and Manoncourt, 2016). After the West Point failure, Liberia adopted a more flexible approach to quarantine, with more care and concern for people and implemented at the local level, rather than through the military (Hoffman, 2016).

If quarantine is put in place, responders should ensure that the affected population is provided dignified living conditions and compensated for the economic loss. Humanitarians can play central a role in addressing the populations' basic needs (cash, food, WASH items, etc.) and their informational needs (on the status of the epidemic and on good practices to avoid its spread) (Oxfam, 2015; Sustersic, 2015a; Laverack and Manoncourt, 2016; Campbell et al., 2017). Providing essential supplies such as food will increase people's acceptance of the quarantine, as they will not have to break the quarantine to get what they need (Kutalek et al., 2015). Quarantine measures are also more likely to be accepted if livelihoods are secured. For instance, in Sierra Leone, the government employed people to farm the fields of quarantined farmers, which increased trust in the response (ACAPS, 2016).

Finally, it is essential to acknowledge that people in quarantine are key actors in the fight against the spread of the virus and should be recognised as such (also see Lesson 6). People can only commit to confining if they understand its aim and process, which should be clearly explained. Ensuring responders' accountability to these individuals, through for instance, two-way communication systems, helps to reduce their anxiety and improves acceptance and compliance (Sustersic, 2015b).

LESSON 12

Resources should not be focused solely on fighting Ebola; ongoing healthcare provision should be supported during an epidemic response

LOW FREQUENCY: 7 papers

HIGH RELATIVE QUALITY: Average score: 41%

HIGH PRIORITY: Average Delphi ranking: 4.46

Key recommendations from the literature and practitioners include the following:

- Support local health systems to keep ongoing healthcare provision
- Ensure resources are available to provide healthcare outside of Ebola.

The Ebola outbreak in West Africa was lethal, but the diversion of resources towards Ebola response efforts also caused significant unintended (and disruptive) consequences for local health systems and other health indicators. As health workers and material resources were diverted to the fight against Ebola in places where the healthcare systems were already structurally poor, many deaths occurred because health centres lacked the capacity to treat more common issues (e.g. diarrhoea, maternal health, HIV, tuberculosis) and to conduct vaccinations (Ansumana et al., 2017; Siekmans et al., 2017).

Pre- and post-natal healthcare was one of the most affected services, especially because of its high risk of infection and the 'no-touch' policy (Denney et al., 2015; MSF, 2016; McQuilkin et al., 2017). Nagai et al. (2020) found that during the Ebola outbreak, deliveries by skilled birth attendants dropped by 37% in Sierra Leone and, in three regions in Guinea, family planning services declined by 75%. This led to more pregnancy-related complications, but also to difficulties for women accessing contraception and safe abortions (Denney et al., 2015) (see also Lesson 9 on gender).

Moreover, healthcare workers, who were highly at risk of contracting Ebola from infected patients (especially given the lack of proper equipment and training), became afraid and left their posts or refused to take in non-Ebola patients with a fever or any other Ebola-like symptoms. A survey in Liberia showed that 'for those who sought care at government hospitals and were unable to receive it, the major barriers were closure of facilities (50%) and healthcare workers refusing to see patients (42%)' (McQuilkin et al., 2017: 932).

It is essential for the humanitarian community to ensure that people can continue to access basic healthcare services, including care for those with chronic and acute diseases, as well as those with other infectious diseases (such as HIV and malaria). It must also ensure appropriate care for

pregnant women and those with more benign sicknesses, and vaccinations for children should continue (Kutalek et al., 2015; McQuilkin et al., 2017; Grünewald and Maury, 2020).

Examples from the practitioners' panel (edited)

"In the DRC, Beni's ETU was built inside the hospital. This allowed the healthcare system to still respond to other diseases and provide services (obstetrical services, paediatrics, etc.) and the surveillance of other diseases was kept functional."

ICU Doctor, ALIMA

"In Monrovia, MSF set up a full Ebola triage next to a major hospital. People who met the case definition for Ebola could be tested and cared for while waiting for their results. This protected the hospital, staff and patients while allowing people to seek healthcare in their preferred location. Visitors were also able to come and see their family member from a safe distance to reassure them that the person was treated well while waiting for their test result."

Humanitarian Representative, MSF

Pipeline Community Health Center in Monrovia, Liberia, is working to resume routine immunizations that have been put on hold due to the Ebola epidemic. Credit: UNMEER/Aalok Kanani.

LESSON 13

Ebola survivors should not be forgotten. Health complications due to the virus last long after a person has been cured of the infection, and survivors experience stigma, psychological trauma and economic difficulties

LOW FREQUENCY: 4 papers

MEDIUM RELATIVE QUALITY: Average score: 22%

HIGH PRIORITY: Average Delphi ranking: 4.23

Key recommendations from the literature and practitioners include the following:

- Provide ongoing healthcare to Ebola survivors
- Support Ebola survivors with livelihood support and psychological care.

Responses to Ebola and post-Ebola recovery should consider the specific vulnerabilities that survivors face. Previous Ebola experiences have shown that survivors may suffer from other physical health issues after recovering, and will thus need specific follow-up care (MSF, 2016). Ideally, Ebola survivors should have uninterrupted access to healthcare.

Survivors are also stigmatised, often viewed by others as 'guilty' of not having respected health directives or as 'dangerous' by posing a risk that the disease may spread again (especially as there is uncertainty among the health community about the persistence of the virus in bodily fluids) (ACAPS, 2015d; Alcayna-Stevens, 2018). This stigma can lead to people being socially excluded and economically marginalised, due to for example losing their jobs or dropping out of school (Cancedda et al., 2016). In turn, this marginalisation – added to the trauma of being infected and treated (see Lesson 14 on psychological impacts) – can result in serious psychological health issues (MSF, 2016).[23]

LESSON 14

Ebola is traumatic. People experience fear, stigmatisation, grief and trauma. Psychosocial support should be part of the Ebola response

MEDIUM FREQUENCY: 8 papers

HIGH RELATIVE QUALITY: Average score: 37%

HIGH PRIORITY: Average Delphi ranking: 4.15

Key recommendations from the literature and practitioners include the following:

- Engage mental healthcare professionals in ETCs
- Provide psychological first aid training to community leaders.

Once an epidemic is over, resources should continue to be invested to help those who have suffered and to support the affected society in overcoming the trauma it has sustained. Some people referred to the Ebola crisis as a 'war' (Alcayna-Stevens, 2018: 43), with similar chaos, fear and losses, and with the same effects on mental health.

Good practice example 3: Training local actors to provide psychological support in Sierra Leone

Trocaire, Street Child and Caritas trained faith-based leaders on psychological support in Kambia, Sierra Leone. These faith leaders contributed greatly to the psychological recovery of the affected individuals in the community. The fact that the support came from leaders known by the community was highly appreciated.

Source: Batilo Momoh et al. (2016).

Ebola affects people in different ways, but children are particularly affected by the social isolation, stress, trauma and grief (Hallgarten, 2020). In general, survivors often experience trauma and stigmatisation (see Lesson 15 on survivors), and people whose relatives have died experience grief and survivor's guilt (Kutalek et al., 2015). Health workers who witness the deaths of colleagues often suffer from anxiety and higher stress at work (Mohammed et al., 2015) (also see Lesson 1 on health workers). The wider community may be affected by isolation (especially if they were quarantined), by fear for their lives and for the lives of their loved ones, by the loss of economic opportunities and by the impact of the epidemic on social cohesion (Sustersic, 2015b; Konteh, 2017). Indeed, fear of contagion led people to stop social interactions and shaking hands, and encouraged

people to keep their distance, which further isolated people (Alcayna-Stevens, 2018). Lack of trust contributed to the erosion of the social fabric in many affected neighbourhoods (Alcayna-Stevens, 2018).

Psychological support is essential to enhancing the resilience and recovery of Ebola-affected populations. Building on people's self-reliance and restoring social links within families and communities have been good practices in increasing the resilience of Ebola-affected people (Batilo Momoh et al., 2016).

All ETCs should include staff trained on mental health and psycho-social support, and frontline workers should be trained on core psychosocial principles and psychological first aid, to support Ebola patients, survivors, relatives and medical staff (Ripoll et al., 2018).

Building on people's self-reliance and restoring social links within families and communities have been good practices in increasing the resilience of Ebola-affected people.

LESSON 15

Ebola outbreaks can create threats to people's safety, which should be addressed as an integral part of the response

MEDIUM FREQUENCY: 8 papers

HIGH RELATIVE QUALITY: Average score: 38%

MEDIUM PRIORITY: Average Delphi ranking: 3.85

Key recommendations from the literature and practitioners include the following:

- Dedicate staff to monitor and refer protection risks, especially for quarantined families
- Identify and support unaccompanied children
- Create a safe space for children to discuss their needs.

Some of the measures put in place to tackle Ebola created or amplified existing threats to people's safety and security that were overlooked during the West Africa Ebola outbreak (UNICEF, 2016). Restrictions on movement such as quarantine and check points, with a heavy military presence, have created opportunities for misuse of power and sexual abuse – especially against women and children. In West Africa, school closures and quarantines increased domestic abuse, and the services for reporting child and gender-based violence were inadequate (Fink-Hooijer, 2015).

Children are particularly at risk during Ebola outbreaks, and these risks should not be underestimated. They may lose their parents or care providers to the disease, and often experience trauma. Unaccompanied children should be systematically identified, and their specific needs considered in the response (Fink-Hooijer, 2015). The lack of resources for supporting children and school closures (also see Lesson 16) can increase the incidence of child labour (Risso-Gill and Finnegan, 2015; UN et al., 2015) and raises concerns about the risk of sexual exploitation of girls (Denney et al., 2015).

Ebola responders should include activities to prioritise people's safety. In Sierra Leone, protection actors 'mobilised social workers to ask protection-related questions during the daily or weekly checks with the quarantined families' (ACAPS, 2016: 37). Dedicated protection experts should be part of humanitarian programmes to ensure safe programming and adequate referrals (Fearon, 2015). It is also essential to provide children with safe spaces in which to communicate their needs (ACAPS, 2016).

LESSON 16

Measures to fight Ebola have negative effects on the economy. Cash and voucher assistance can support affected households and Ebola survivors to not only cover their basic needs (food, shelter, school fees, etc.), but also to protect their livelihoods, both during and after the outbreak

VERY HIGH FREQUENCY: 24 papers

HIGH RELATIVE QUALITY: Average score: 49%

MEDIUM PRIORITY: Average Delphi ranking: 3.77

Key recommendations from the literature and practitioners include the following:

- Support Ebola-affected household with economic support such as cash and voucher assistance where possible
- Conduct activities that help restore livelihoods, such as trainings, distribution of agricultural inputs or support to income-generating activities.

Ebola outbreaks are as much economic crises as they are health crises (Alcayna-Stevens, 2018). During the Ebola response, health-related directives severely and detrimentally affected people's abilities to sustain their livelihoods. Measures such as quarantining, no-touch policies and bans on bushmeat prevented people from working or resulted in them losing their businesses (ACAPS, 2016).

Epidemics have economic consequences both during and after the outbreak. The Ebola outbreaks caused inflation, which significantly hampered market functionality (Dumas et al., 2017), reducing the supply of goods (Mercy Corps, 2014) and forcing some entire markets to close (Kodish et al., 2018). Outbreaks negatively affect market access: quarantines prevent people from working in their fields or businesses, and movement restrictions with road and border closures impair access to markets (Kodish et al., 2019). They also lead to property losses – for instance when a deceased person's items (including phones) are sprayed with chlorine.

After the epidemic, continuing economic challenges include a decrease in employment opportunities and a decline in foreign investment at the macroeconomic level. At the household level, income is reduced as a result of losing human power (families decimated by the outbreak), market access (as survivors are marginalised) and business opportunities (e.g. during the Ebola response, groups that were reliant on hunting and selling lost their source of income) (Rohwerder, 2014; ACAPS, 2015d).

Humanitarian actors should include economic support for Ebola-affected households in their responses. When the context allows, cash and voucher assistance has proven effective in providing such support, as it allows households to cover their basic needs (food, WASH, etc.) and other needs, such as school fees (Radice, 2017; USAID, 2019). Other long-term activities that improve food security and nutrition can include income-generating activities, the distribution of agricultural inputs and trainings, and micro-grants (Mercy Corps, 2014; Batilo Momoh et al., 2016; Dumas, 2016; YMCA, 2016). These activities will have a positive impact, not only on food security, health and nutrition outcomes, but also on education outcomes, as they can allow parents to send their children back to school after the outbreak (ACAPS, 2016).

D // Lessons on coordination and funding

LESSON 17

No single coordination model has emerged as most effective but ensuring clarity of roles and responsibilities is important across contexts

VERY HIGH FREQUENCY: 19 papers

MEDIUM RELATIVE QUALITY: Average score: 36%

HIGH PRIORITY: Average Delphi ranking: 4.05

The one key recommendation from the literature and from practitioners is to:

- Clarify roles and responsibilities for all actors in each context.

Highly lethal epidemics such as Ebola are complex, as they can become emergencies that have implications beyond the health sector. They therefore require strong coordination between responders from across the traditional sectors of humanitarian action.

Studies highlight the multiple challenges in coordinating the responses to both the West Africa Ebola outbreak and the ongoing response in the DRC. First, both national surveillance systems and the international community (including the UN and NGOs) were slow to identify the outbreak, as Ebola presents few specific symptoms (Coltart et al., 2017). At the beginning of the West Africa outbreak, only the Red Cross and Médecins Sans Frontières had correctly identified its potential scale and catastrophic impact.[24] National and international coordination systems were overwhelmed by the scale of the epidemic. The WHO, challenged by structural constraints and political considerations (WHO, 2015; Kamradt-Scott, 2016), did not act quickly enough, nor did it take the pre-eminent leadership role it was expected to (Kamradt-Scott, 2016), thus creating a 'leadership vacuum' (Lee, 2016: 931).

Second, once Ebola was identified as an emergency, it continued to be considered as a health crisis, rather than a humanitarian one. This meant that the cluster system was not activated, with mixed implications:

> While this had the positive effect of leaving national authorities to take the lead in the response, it also left many non-health non-governmental organisations (NGOs) unsure of how or where to engage. Treating Ebola predominantly as a health crisis, especially in the early stages, also meant that its wider implications, for instance for education, livelihoods, protection and political stability, were downplayed or ignored.
>
> *(DuBois and Wake, 2015: 7)*

The coordination structure for the Ebola response was based on different pillars (case management, burials, surveillance, psychosocial support, social mobilization, laboratories), led by either the WHO or other international organisations (e.g. UNICEF and IFRC). In all countries affected by Ebola, the national government – usually through the Ministry of Health – coordinated the response (the exception being in Guinea, where WHO led the response). This structure had its flaws, however, as it relied on the coordination capacities of both governments and international organisations who may not be coordination specialists (Olu et al., 2016) and did not always have the capacity necessary to lead such a response (UNICEF, 2016; Cook et al., 2018).

Context plays an important role in designing the coordination structure of a response, as what worked in one country may not work in another. Each government took a different approach. Sierra Leone's government created the National Ebola Response Centre (NERC) to coordinate the whole response, which was staffed with both civilian and (controversially) military personnel, and with international advisors (DuBois and Wake, 2015). Liberia invited international experts MSF and WHO to integrate into existing structures (e.g. the Ministry of Health), which created 'a relationship rather than a bureaucracy' (DuBois and Wake, 2015: 30) and allowed for a more rapid response.

The pillar coordination structure created several challenges. First, its top-down and bureaucratic approach led to a lack of accountability towards affected populations (DuBois and Wake, 2015). In Sierra Leone, it also meant that the usual ways of sharing information and data between the actors on the ground and the coordination actors did not take place (Fearon, 2015). The lack of coordination, especially between sectors not involved in the health aspect of the response, led to certain zones and sectors not getting support, while others experienced duplication (Fearon, 2015; Olu et al., 2016).

Finally, the international community's general lack of experience in responding to an Ebola epidemic, which is normal for an Ebola outbreak of that scale (Coltart et al., 2017; Elmahdawy et al., 2017), combined with its fear of doing harm and of failure, hampered coordination and knowledge building and sharing during the West Africa outbreak. Epidemics such as Ebola outbreaks demand deliberative, scientific-operational forums in which doubts, experiences and results can be shared and decisions revised (Bayntun and Zimble, 2016).

There is no consensus in the literature or among experts about which coordination system works best in responding to Ebola, but there is an obvious need to ensure clear roles and responsibilities (Mobula et al., 2020). Such clarity also helps to avoid the 'coordination trap' wherein most resources are spent on coordination rather than on the actual response (Batilo Momoh et al., 2016).

LESSON 18

Resources to respond to Ebola should be agile and follow best medical and epidemiological practices while also meeting all of the basic needs of the affected population

MEDIUM FREQUENCY: 11 papers

HIGH RELATIVE QUALITY: Average score: 47%

HIGH PRIORITY: Average Delphi ranking: 4.08

Key recommendations from the literature and practitioners include the following:

- Disburse funds quickly
- Allow flexible funding in order to adapt to changing needs and priorities
- Target more funds towards direct implementing actors
- Hold fund recipients accountable.

Donor engagement is essential in any emergency. In particular, funding to respond to Ebola needs to be quick, predictable and flexible to allow for a timely, comprehensive and independent response. Ebola outbreaks should not be reduced to their medical needs: they are multipronged crises that have long-term effects on affected societies.

During the West African Ebola Outbreak (2014), the emergency was first considered a health crisis, rather than a humanitarian one. This influenced the priorities of donors, who primarily targeted health-related outcomes and funded non-health specialist NGOs to work on the medical response, while neglecting other aspects such as WASH and livelihoods (Adams et al., 2015).

Additionally, while substantial funding was allocated, its disbursement came late (Bond, 2016) – in some cases, more than six months after the WHO had declared the outbreak (Grépin, 2015). And according to several NGOs, the funding was not flexible enough to respond to such settings, where the situation changed over time. For instance, the refusal of donors to fund the construction of more permanent health infrastructure forced some NGOs to raise funds independently to fill the gaps (Cancedda et al., 2016). Funding should therefore focus on multi-sectoral outcomes and impacts, rather than only on medical outputs (ibid.). Good practices have included allowing NGOs to redirect funds to priorities linked to Ebola's indirect consequences, for instance to respond to non-Ebola health needs (IRC, 2016a).

Finally, experts highlighted that one of the lessons learned is that funding mostly went through large actors like the UN and national governments, to the detriment of smaller organisations whose actions were complementary.[25]

Example from the practitioners' panel (edited)

> **"In the DRC we saw massive amounts of money for the Ebola response flowing from the World Bank directly to the Congolese government. Local communities were not consulted with and their priorities were not considered for how the money should be spent. To this day, much of this money is still unaccounted for. Donors and governments should not be above accountability."**
>
> Humanitarian Representative, MSF

Authors' reflections

This lessons paper aims to save time and resources in future Ebola responses by summarising the documented evidence, at a given point in time, of what has worked in past responses – and where there is room for improvement.

Evidence may be defined as 'information that helps to substantiate or prove/disprove the truth of a specific proposition', usually compared to a given standard (Knox Clarke and Darcy, 2014: 7). But it is context dependent; given the variety of contexts and the fairly limited number of documented large to medium-scale Ebola responses to date, not all the evidence summarised herein is therefore necessarily knowledge – that is, 'predictive, testable, consistently successful belief' (Dammann, 2019).

Indeed there are contradictions in some of the evidence explored, different views among the experts consulted and discrepancies between the documents reviewed – for instance on what the best coordination system can be, or on the use of quarantine and the military forces.

It therefore is understandable that some of the lessons identified, drawn either from the literature or from practitioners' experience, highlight issues in the Ebola responses but are missing practical examples on what would work best. This is the case, for instance, for the coordination system: evidence is missing on which coordination system has proven the most appropriate to an Ebola outbreak. It is also true for issues of corruption and responding to Ebola amidst a conflict: both literature and experts have highlighted the risks associated with 'Ebola business' and 'Ebola fatigue', but research is limited on initiatives that have successfully prevented it.

Drawing together and distilling the available evidence on humanitarian responses in a lessons paper is a useful step towards improving action. However, given the evidence gaps, it is important that practitioners and researchers focused on Ebola continue to undertake and share learning to improve responses to future epidemics.

Endnotes

1. For example, the Cholera Outbreak in Haiti (2010–2011), the Ebola outbreaks in West Africa (2014–2015) and in the Democratic Republic of the Congo (DRC) (2017, 2018, 2018–2020 and 2020 ongoing), the COVID-19 epidemic (December 2019, ongoing).
2. This paper does not aim to be comprehensive but proposes action points to take into consideration when designing an Ebola response.
3. This paper was written primarily to help practitioners with future programming in epidemic contexts; however, it contains several lessons that are useful to donors, international organisations and researchers.
4. The second search was conducted to include more papers on lessons learned from the ongoing Ebola outbreak in the DRC, as well as to add resources that had been missing from the ALNAP Help Library.
5. The authors made the choice to focus this lessons paper on interventions that specifically aimed to improve the situation of Ebola-affected populations by: (1) stopping the transmission of the disease (including not only through vaccination, but also water management or hygiene promotion); (2) reducing morbidity and mortality (including early diagnosis and treatment); or (3) containing the impact of the epidemic on both the health system and on other areas of life (including livelihood and food security support).
6. Papers that describe interventions and results without reflecting on key takeaways and learnings were excluded.
7. Based on standard deviation.
8. The average relative quality score across all 185 is 36 out of 100. Of the total, 40% of the documents have a low relative quality score; 15% have a medium relative quality score; 16% have a high relative quality score; and 29% have a very high relative quality score.
9. Based on standard deviation: all lessons were scored between 3.50 and 5.00.
10. Source: expert from the Delphi process.
11. Source: expert from the Delphi process.
12. Source: expert from the Delphi process.

13. Source: expert from the Delphi process.

14. Source: expert from the Delphi process.

15. Source: expert from the Delphi process.

16. Source: expert from the Delphi process. See https://alima.ngo/en/cube/ for more information on the Cube.

17. For certain groups such as the Nande, 'foreign' can mean a different nationality or someone from a different region in DRC. Source: expert from the Delphi process.

18. Source: expert from the Delphi process.

19. Broadly speaking in West Africa, when a person dies, women are responsible for preparing the body of women, and men are responsible for men who die. Source: expert from the Delphi process.

20. Source: expert from the Delphi process.

21. Guidelines on the use of armed escorts for humanitarian convoys: www.unocha.org/sites/unocha/files/Armed%20Escort%20Guidelines%20-%20Final.pdf.

22. Source: expert from the Delphi process.

23. The literature is mostly silent on the specific type of support that Ebola survivors should receive, but there may be important lessons to draw from livelihood-related interventions for people who are HIV positive.

24. Source: several experts from the Delphi process.

25. Source: several experts from the Delphi process.

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All studies included in the analysis

Author	Date	Title
Abramowitz, S. et al.	2015	Community-centered responses to Ebola in urban Liberia: the view from below
Abramowitz, S. et al.	2017	The opposite of denial: social learning at the onset of the Ebola emergency in Liberia
Abramowitz, S. et al.	2016	Ebola community care centers: lessons learned from UNICEF's 2014-2015 experience in Sierra Leone
ACAPS	2015	Ebola in West Africa - Guinea: resistance to the Ebola response
ACAPS	2015	Ebola outbreak, Sierra Leone: communication: challenges and good practices
ACAPS	2016	Beyond a public health emergency: potential secondary humanitarian impacts of a large-scale Ebola outbreak
ACAPS	2015	Ebola outbreak in West Africa: challenges to the reintegration of affected groups into communities
ACAPS	2015	WASH in Guinea, Liberia, and Sierra Leone: the impact of Ebola
ACAPS	2015	Ebola outbreak in West Africa: lessons learned from assessments in Sierra Leone and Liberia
ACAPS	2015	Ebola outbreak, Liberia: communication – challenges and good practices
ACAPS	2015	Ebola in West Africa: impact on health systems
Adams, J. et al.	2015	The Oxfam Ebola response in Liberia and Sierra Leone
Adams, V.	2016	OCB Ebola review

Age International	2015	Evaluation of Disasters Emergency Committee and Age International funded: responding to the Ebola outbreak in Sierra Leone through age-inclusive community-led action
Ahmed, K. et al.	2019	Development and implementation of electronic disease early warning systems for optimal disease surveillance and response during humanitarian crisis and Ebola outbreak in Yemen, Somalia, Liberia and Pakistan
Alcayna-Stevens, L.	2018	Planning for post-Ebola: lessons learned from DR Congo's 9th epidemic
Androsik, A.	2020	Gendered understanding of Ebola Crisis in Sierra Leone: lessons for COVID-19
Ansumana, R. et al.	2017	Impact of infectious disease epidemics on tuberculosis diagnostic, management, and prevention services: experiences and lessons from the 2014–2015 Ebola virus disease outbreak in West Africa
Ayoo, S. et al.	2016	Evaluation of IFRC West Africa Ebola Viral Disease Appeal Response – Sierra Leone and Liberia
Baggio, O. et al.	2019	Bringing community perspectives to decision-making in the Ebola response in the Democratic Republic of Congo
Barbisch, D. et al.	2015	Is there a case for quarantine? Perspectives from SARS to Ebola
Batilo Momoh, H. et al.	2016	Evaluation of DEC Ebola Response Programme Phases 1 & 2
Bayntun, C. and Zimble, S.-A.	2016	Evaluation of the OCG response to the Ebola outbreak: lessons learned from the Freetown Ebola treatment unit, Sierra Leone
Beavogui, A.H. et al.	2016	Clinical research during the Ebola virus disease outbreak in Guinea: lessons learned and ways forward
Bedford, J.	2018	Key considerations: Burial, funeral and mourning practices in Équateur Province, DRC
Bedford, J.	2018	Key considerations: health-seeking behaviours in Équateur Province, DRC
Bond	2016	Bond and Ebola coordination: activity report
Brandt, A. et al.	2017	Infant feeding policy and programming during the 2014–2015 Ebola Virus Disease outbreak in Sierra Leone
Calain, P. and Poncin, M.	2015	Reaching out to Ebola victims: coercion, persuasion or an appeal for self-sacrifice?
Campbell, L. et al.	2017	Learning from the Ebola response in cities: responding in the context of urban quarantine
Campbell, L.	2017	Learning from the Ebola response in cities: population movement

Campbell, L.	2017	Ebola response in cities: learning for future public health crises
Campbell, L. and Miranda Morel, L.	2017	Learning from the Ebola response in cities: communication and engagement
Cancedda, C. et al.	2016	Strengthening health systems while responding to a health crisis: lessons learned by a nongovernmental organization during the Ebola Virus Disease epidemic in Sierra Leone
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