



Wilton Park



Image: UN Photo/Marlon Lopez

## Report

# The 2014-2015 Ebola outbreak: lessons for response to a deliberate event

Monday 19 – Wednesday 21 September 2016 | WP1469

In association with:



Global Affairs  
Canada

Affaires mondiales  
Canada



Ministry  
of Defence



## Report

# The 2014-2015 Ebola outbreak: lessons for response to a deliberate event

Monday 19 – Wednesday 21 September 2016 | WP1469

The Ebola outbreak demonstrated a clear lack of preparedness from the global health and humanitarian system for an outbreak of infectious disease. The dialogue at Wilton Park built on an investigation conducted by the United States to determine how the response from the IOs and NGOs may change, or even cease, if an outbreak is determined to be intentional, or if the outbreak spread to a non-permissive environment. The study approached key stakeholders from relevant response organisations who were asked to describe how their organisations would have responded to a fictional scenario in which a non-state actor claims responsibility for new cases of Ebola in an adjacent geographical area with a previously unexposed population. The study subsequently sought the views of major bilateral donors to the Ebola response to better understand the challenges and approaches nations would take in the event of a deliberate use and its impact on a humanitarian disaster response. This dialogue aimed to bring together a selected group of multi-sector participants to glean what has been learned so far and develop firm proposals for action.

In association with: Global Affairs Canada, the UK Ministry of Defence, the US Department of Health and Human Services, and the US State Department.

### Key points

- The Ebola outbreak demonstrated a number of weaknesses in the international health and humanitarian response infrastructure. It is clear that a number of factors affect the nature of response and that any possible combination of these factors could occur. Permissiveness of environment affects NGO response, and a biological attack shifts response into including a military component. A natural outbreak could also be exacerbated by a nefarious actor acquiring biological samples that could be used deliberately against populations.
- Interoperability and coordination with the military is a key lesson to be learned. Military actors possess capacity that can be used, and are useful for providing surge and additional capacities in an emergency. Hence they have a significant role to play in both security and response. However, this role does also raise concerns, both from a military perspective (danger of mission-creep) and a response perspective (concerns over militarisation of response).
- The engagement of local communities is similarly a common lesson to be learned from Ebola. Local innovations, local community knowledge, and the building of community trust were key to containing and treating the outbreak. Communities, therefore, must be *engaged* and not simply expected to submit to external impositions of response.
- In implementing Article VII and providing aid and assistance, it is necessary to build capacity to both provide *and* receive assistance under Article VII. Response

capacities should ensure that not only is there a clear requirement for aid and assistance being sent, but that the capability of countries to logistically distribute the aid is sufficient.

- Bio-risk was high in the Ebola outbreak and managing this risk is one of the keys to containment. Biosecurity procedures and biosafety protocols should be embedded in all outbreak responses lest a natural outbreak turn out to be a deliberate biological weapon event. Bioethics for clinical trials and compassionate use authorisations must be considered *before* outbreaks to allow for reflexive and considered, rather than emergency-mode, decisions.
- Each of these challenges must not be considered in isolation. All challenges exist in a complex environment with one another and can affect one another in emergent ways.
- Recommendations:
  - That the BTWC operates in a complementary fashion to the health and humanitarian communities; not duplicating the efforts that these two systems make.
  - Establishing an Article VII Working Group to specifically explore assistance in a BWC context, explicitly engaging with States Parties, the WHO, the IASC, and the Humanitarian Cluster System.
  - Bio-risk management should be considered prior to the next outbreak and embedded in natural as well as deliberate outbreak responses. Actions Package 3 of the GHSA should be engaged in this aim.
  - Communities must be engaged, and communication with affected populations must be open and honest, in order to improve future responses and enable fast and inclusive action.

“Article VII of the Convention is of particular importance”

## **Ebola and the BTWC: A brief context**

1. The first case of the outbreak occurred in December 2013 in Meliandou in south-eastern Guinea, but was only confirmed as Ebola in March of 2014. The initial response was severely delayed, primarily due to a lack of financial and human resources for prevention, detection, and mitigation of disease in West Africa. This delay in response contributed to the snowballing of the outbreak into a major humanitarian crisis, which demonstrated weaknesses in the health, humanitarian, and security sectors.
2. The role of the BTWC, and the broader security community such as the Global Partnership, in disease outbreaks is multiple and sometimes dependent upon the scenario itself. In the case of the BTWC specifically, the role comes in when there is a deliberate event, investigation into a deliberate event, or in supporting the capacity building in advance of an event. Scenarios range from confirmed/suspected deliberate use of biological weapons (BW), to the compounding of an already non-permissive environment with use of BW, to the danger of a biological weapon being used in the midst of a naturally occurring outbreak. In all these scenarios, Article VII of the Convention is of particular importance, given that it focusses upon the provision of assistance to affected States Parties should a UNSC determine an outbreak is deliberate.
3. It was made clear by the United States investigation prior to this dialogue that many NGOs would not act should an outbreak be suspected or confirmed to be deliberate. In particular, a deliberate event in a non-permissive environment would create significant difficulties in maintaining the neutral position of NGOs and in ensuring the safety and security of NGO humanitarian personnel.

## **Contextual factors**

4. No two outbreaks are likely to be the same, and thus no two responses will ever be exactly the same. There are in fact a range of possible contexts in which a response may be necessary, and viewing deliberate/natural outbreaks and permissive/non-

permissive environments as either/or constructs may be unhelpful and possibly counter-productive. Questions of deliberate use may remain unresolved to one extent or another, and the environment may show differing degrees of permissiveness. Hence deliberate/natural and permissive/non-permissive might be better thought of as spectra than as either/or.

5. On the deliberate/natural spectrum is not just whether a biological weapon has been used. First of all, a deliberate release may be made by a state or a non-state actor; creating questions of sanctions, military counter-attack, investigation of source, verification of accusations, etc. Furthermore, a natural outbreak may be claimed as deliberate by an actor, or an actor may falsely claim an outbreak to be imminent. Finally, a state-on-state biological weapon attack on a NATO ally would trigger an immediate military response, shaping the initial health response and framing the subsequent health and humanitarian efforts very differently. All of these factors shape the response and the necessity for different actors and capacities.
6. The permissive/ non-permissive environment spectrum is rather more continuous and affects different actors in different ways. Not only is the environment likely to switch from permissive to non-permissive mid-outbreak (as the Ebola outbreak did with riots, community backlash, and violence against health care workers (HCWs)); but the very definition of permissive is debateable among those responding to the outbreak. Some humanitarian actors would consider the risk of simply contracting Ebola as non-permissive, whereas many health and NGO actors would consider civil-war/ insurgency as a non-permissive environment (though this would not deter all from engaging regardless). Additionally, “permissive” may include access issues: mountainous regions and countries with limited connectivity by air to transportation hubs may limit the influx of personnel and aid; extreme heat (e.g. West Africa and Middle East) can make extended periods of time in personal protective equipment (PPE) much less tenable; and remote regions like Madagascar or the Arctic (although useful for containment) can also significantly reduce capacity to respond effectively.
7. Finally, it is necessary to consider the pathogen itself, since this will also shape the response considerably. Consider the comparison between Ebola and Zika: one transmitted through bodily fluids, one through a mosquito; one results in internal bleeding, one results in mild dengue-like symptoms along with encephalopathy and Guillain-Barré syndrome; one is of significant concern in all infected people and particularly health care workers (HCWs), one is of particular concern in pregnant women. Additionally, one must consider the difference between a human-oriented event and an animal/plant attack. Context, therefore, is highly influential on the characteristics of the outbreak, and thus the characteristics of response.

“the relationship between military actors and the overall response must be carefully negotiated”

### **Military coordination and interoperability**

8. As part of the international response to Ebola, states such as the UK and US commissioned military resources (human, materiel, and logistical) to respond. Additionally, the affected countries themselves utilised some military resources as part of their own response effort. The use of military resources is widely regarded as being for occasions when civilian capacity to respond is overwhelmed, and this was certainly true of the Ebola outbreak.
9. A key point to note first, however, is that militaries do not necessarily want, and are sometimes unwilling to be tasked to, these types of functions; they are simply well trained and versed in the environments and capacities required in response. This includes logistics, command and control, communications, field hospital operation and construction, complex tactical coordination, etc. Militaries particularly are concerned at the potential for mission-creep and do not want to become commonplace in responses such that they are forced to reduce capacity in other defence-related arenas.
10. Similarly, militaries have often been regarded with some suspicion by the humanitarian

and health communities. In this case, operating in conjunction with military actors can obstruct the NGO desire to be viewed as neutral in conflicts; if one is seen to be working with the military, one cannot always guarantee access to affected populations. Secondly, working with military actors can often lead to a population backlash, or even insurgent backlash, which jeopardises the safety and security of the medical and humanitarian workers who are operating in the same environments.

11. As such, the relationship between military actors and the overall response must be carefully negotiated and must entail a well thought out role-set for the military under which they must operate. In particular, questions must be raised as to what capacities can be, and will be, provided by the military when necessary; and under what circumstances the military will be, and is willing to be, brought in to respond.
12. It is clear, however, that the role of military expertise and capacities in a deliberate event, in a natural outbreak, and in a non-permissive environment will be different. It is also clear that the role of the military may change respective to changing aspects of the outbreak across the length of the response.

### **Community engagement: multifaceted benefits**

13. A widely asserted lesson from the Ebola outbreak is the need for more effective community engagement. The initial exclusion of communities from decision-making and lack of communication to communities created an environment in which riots, mistrust, and home-sequestration of patients grew. This further complicated and compounded the efforts of response; but the very engagement of local knowledge, community leaders, trusted practitioners within the community, and communication, education, and engagement on a much wider scale is heavily credited with the successful cessation of transmission, treatment of patients, and improved contact tracing capacity.
14. Building trust within communities (affected and non-affected) can play a role in prevention of mass hysteria, enabling the proper functioning of command and control of the response, facilitating vaccination strategies, and reducing the likelihood of public backlash to quarantines and infection control measures. Trust is constructed on a foundation of open, honest communication and frequent interaction. For communities to engage fully with the response efforts, they must understand and be informed of response efforts whilst being engaged in decision-making processes.
15. Failure to build trust and to engage with communities created many of the conditions which hindered response efforts. Firstly, fear and uncertainty in non-affected populations increased pressures on governments and airlines to restrict travel and trade (despite recommendations to the contrary from the WHO); this significantly hindered the provision of aid and assistance, reduced capacity for medical evacuation of HCWs, and sent a message to the local populations that the world had abandoned them.
16. Secondly, stigmatisation can further hinder response. During the 2014-15 Outbreak, stigmatisation of nationals of the affected countries, and even of Africans in general, occurred across the globe, even if individuals had never come into contact with an Ebola patient. Stigma also surrounded some of the HCWs and aid personnel who volunteered in the affected countries; their ostracisation upon return to their home countries became a disincentive to travelling to West Africa. The severe stigma surrounding the survivors of Ebola was an even more problematic issue. Convalescent plasma and whole blood are key parts of a treatment regime for diseases for which no effective drugs or vaccines yet exist; given the stigma surrounding survivors, finding enough to provide blood for treating the sick became hugely problematic. Programmes that lifted the stigma and called survivors 'Ebola heroes' had increased success in collecting blood and treating patients.
17. Finally, local knowledge is an invaluable resource, which must be utilised more often in engaging fully with communities and increasing buy-in for the response. Additionally,

"Failure to build trust and to engage with communities created many of the conditions which hindered response efforts"



the innovations required to work in difficult circumstances with limited resources created a pool of human knowledge resources, which must be preserved and transferred through education and training to others in order to fully be able to respond to future outbreaks.

### **Aid and assistance: Article VII in practice**

18. A final aspect of response which must be coordinated in order to fully respond to outbreaks, especially when considering a deliberate outbreak where NGOs may not respond and where Article VII obligates States Parties to provide, is the provision, receipt, coordination and distribution of aid and assistance. This section focusses on three aspects of aid provision: medical countermeasures (MCMs), logistics, and financing.
19. MCMs are an important part of the response to disease outbreaks (natural or deliberate) because they form the technological and materiel core of response. In taking lessons from SARS, the delivery of MCMs to recipient countries was found to be extremely difficult; for example, taking 9 months for the delivery of effective MCMs. Looking to Ebola, it is clear that not much has changed. The lack of an effective drug or vaccine at the outset of the outbreak made discussions of MCM delivery much more difficult because these had to focus on the use of existing MCM stockpiles of PPE and diagnostic equipment rather than treatments and vaccines.
20. Where vaccines and experimental treatments were available, a number of issues became apparent. The first was that of liability: who is to be responsible for any side-effects that appear in patient populations? The lack of clarity as to the answer created difficulties in administering experimental treatments or vaccines. This was especially true when extending small-scale use of such treatments (licensed under compassionate use agreements) to larger scale and multi-country use where liability is significantly increased and possibly distributed, requiring negotiation. Again, lessons have not been learned from prior experience: the lack of liability acceptance by the Japanese government foiled efforts to deliver potassium iodide to the Fukushima response.
21. Additionally, the use of vaccines is often a cornerstone of an effective communicable disease outbreak response because of its capacity to prevent effectively rising caseloads and the spread of disease. However, in Ebola, the lack of a vaccine meant that population treatment and the use of proper hygiene and infection control measures became extremely important. Additionally, mass vaccination programmes require both community engagement and, crucially, a permissive environment. Therefore, in order to respond in non-permissive environments, a greater focus will have to be placed, as with the Ebola outbreak, on the use of infection control and basic hygiene and biosafety.
22. Logistical challenges for the Ebola crisis can be generally thought of as resulting from fear and politics. On the challenge of politics, the imperative to “do something” was subsumed into the imperative to be seen to be “doing something”. As such, certain decisions concerning how and when to move assets and materials into the Ebola zone were based less on the on-the-ground requirements and capacities than the desire of assistance providers to be seen to be acting quickly.
23. A significant challenge faced during the West Africa Ebola outbreak was the lack of airlift capacity. While Guinea, Liberia and Sierra Leone had limited direct flight connections to Europe to begin with, these connections were dramatically curtailed as the outbreak escalated. Not only did fears of Ebola spreading to home create conditions by which governments closed their airspaces and restricted travel and trade, but private companies – under high pressures from the public – stopped services to and from West Africa, severely limiting the amount of airlift capacity that could be used for logistical purposes. Again, the military could be used, but this is highly irregular for

militaries, despite their extensive expertise in logistics, and reliance on these resources should be avoided.

24. A significant failure of the response both logistically and overall was a lack of international coordination prior to engagement in-country. When aid arrived at WHO sites in-country, inadequate logistical plans were in place to cope effectively with the sheer volume of aid that arrived. Additionally, the guidance on what aid was needed and what would be accepted often changed while aid was in-transit. These failures are particularly stark when it is noted that the international community (with some notable exceptions) was late coming into Ebola anyway and that these challenges further delayed the provision to and effective use of aid by the affected countries.
25. Financially, the Ebola outbreak has fomented an increasing push towards building emergency or contingency funds, and the development insurance-like schemes and other financial instruments for mitigating the economic costs to a country affected. These new instruments do raise significant questions concerning the capacity of private companies to predict and assess risks of catastrophe and whether to ask private companies to assess risks for public bodies if they are better at it; the extent to which tools such as so-called catastrophe bonds are ethical; what about countries that cannot afford to buy these types of insurance. In short, many aspects of these financial instruments remain unclear and uncertain.

“many of the challenges across outbreak response coalesce around MedEvac”

### **MedEvac: strategic, tactical, and operational complexity**

26. It is important to remember, however, that none of the above questions or problems occur in isolation. The outbreak response is highly complex and involves the confluence of a number of difficult choices and decisions. MedEvac, here, is used as one example where aid provision, context, lack of coordination, and bio-risk reduction formed a nexus of complexity in outbreak response.
27. MedEvac is important for the safety and wellbeing of first responders and HCWs coming in from outside of the affected countries. However, many of the challenges across outbreak response coalesce around MedEvac in particular ways; biosafety challenges, communications/public perception challenges, logistical challenges, etc. One of the first problems to come up with MedEvac was a simple lack of capacity. Private companies and governments closing their airspace and restricting travel significantly reduced the capacity for MedEvac and reduced the number of companies willing to perform these types of services in-country. Additionally, not only did companies reduce their transport to and from the region, but some pilots refused to fly and all this inhibited capacity use.
28. Moving into biosafety, capacity was not only reduced by the lack of willingness, but further reduced by the lack of technological capabilities. Many of the containment units on private planes were airtight, but not water tight – reducing the safety of using these units for containing Ebola. The subsequent development of water-tight ETUs inside aeroplanes took time and reduce the ability of some actors to perform MedEvac services. Additionally, the use of military resources for MedEvac was again seen as mission-creep by militaries and although the capacity exists, it cannot be relied upon.
29. Finally, a fully functioning and unencumbered MedEvac system would be unable to function if the on-ground capacities either in the recipient country or the affected country are not able to transport the patient and contain Ebola in the process. Particularly, problems were encountered when patients were non-nationals of the countries they were being transported to; many governments would not allow non-nationals to be transported within their borders. For a MedEvac system to work, therefore, the technological capability and airlift capacity must exist, but so too must the logistical and treatment capacity. Moreover, the political will and diplomatic effort must exist to allow international transport of these patients.

## Conclusion

From the United States investigation into the implications of a deliberate release of Ebola, it is clear that NGO capacity would be severely reduced under the conditions of a deliberate event (suspected or confirmed). As such, country capacities and the manner in which nations interact with the international organizational community become critical to the overall capacity of response.

Of paramount concern is that the BTWC and other relevant security bodies operate in a synergistic manner with the existing health and humanitarian structures. The security sector should avoid duplicating the efforts of the health and humanitarian communities and ensure that it contributes value to deliberate event responses. The lack of standard operating procedures (SOPs) for the request of, and receipt of, assistance under Article VII of the BTWC is a particular gap in this complementary role for the BTWC in responses.

This could be addressed through the establishment of an Article VII Working Group for the post-2016 intersessional programme. The working group should be tasked to the examination of existing assistance policies (OPCW, WHO, etc.) and the production of BTWC-specific SOPs for use in the invocation of Article VII; either by a State Party in a confirmed event, a state not party in a confirmed event, or states - both party and not party – in need of emergency assistance in a suspected event. This working group must engage with the Interagency Standing Committee (IASC) and the Humanitarian Cluster System, whilst also ensuring that States Parties, international organizations, NGOs and private organizations are at the table.

Additionally, an increase in exercising and scenario planning is required. The coordination and communication capacities needed to respond to all outbreaks (natural and deliberate) were demonstrated to be weak in the Ebola outbreak. These capacities need to be developed and trust needs to be built across actors in order to ensure an effective coordinated response where capacities are not duplicated. Importantly, however, the correct people need to be involved in these exercises – too often personnel are sent to an exercise and then different personnel sent to the next, destroying institutional memory.

Biosecurity, biosafety, and bioethics of disease response were highlighted by the 2014-15 Ebola outbreak. Fast decisions had to be taken in order to approve EUAs and the clinical trials for ZMapp - amongst others - and best practice, along with a deeper consideration of the ethics of outbreak trials, must be preserved. Additionally, many of the observed weaknesses in biosecurity protocols during the outbreak significantly increase the likelihood that a natural outbreak could provide an opportunity for non-state actors to acquire pathogenic materials that could be used in a subsequent deliberate release.

Therefore the inclusion and consideration of bio-risk management both prior to and during all outbreaks – not just suspected/confirmed biological weapon use – should be a priority. The ease of access for non-state actors in obtaining samples and biomaterial in the Ebola outbreak demonstrates a key need to embed bio-risk management into the normal operations of natural disease outbreak response. Of particular use here is Action Package 3 of the Global Health Security Agenda – Biosafety and Biosecurity.

The role of communities in outbreak response must be expanded. The use of local knowledge, local innovation, and community trust was imperative and irreplaceable in the response, and this must not be forgotten. In all the discussions of command and control, the sovereignty of recipient nations is paramount and should be carefully considered and the impact on local populations and local cultures (including the de-stigmatisation of survivors and responders) should be included in decision-making.

Whatever the next event or outbreak is, and regardless of its source, the Ebola outbreak revealed weaknesses in the global health and humanitarian responses that must be fixed. Coordination between agencies should be increased, and efforts should not be duplicated. A one size fits all approach will not work for future outbreaks, nor did it work for Ebola, and flexibility should be engineered into the system and coordination to allow for the international community to provide what is needed, when it is needed, rather than



everything at once.

**Joshua Hutton**

Wilton Park | November 2016

Wilton Park reports are brief summaries of the main points and conclusions of a conference. The reports reflect rapporteurs' personal interpretations of the proceedings – as such they do not constitute any institutional policy of Wilton Park nor do they necessarily represent the views of the rapporteur.

Should you wish to read other Wilton Park reports, or participate in upcoming Wilton Park conferences, please consult our website [www.wiltonpark.org.uk](http://www.wiltonpark.org.uk)

To receive our e-newsletter and latest updates on conferences subscribe to <https://www.wiltonpark.org.uk/newsletter/>