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Case 11 : Going Beyond the Virus: Understanding the Drivers of the Ebola Virus Outbreak

Reshel Perera
Western University

Michel Deilgat
Public Health Agency of Canada

Suzanne Boucher
Public Health Agency of Canada

Ava A. John-Baptiste
Western University, ajohnbap@uwo.ca

CASE 11

Going Beyond the Virus: Understanding the Drivers of the Ebola Virus Outbreak

Reshel Perera, BSc, MMASc, MPH (Class of 2019)
Michel Deilgat, CD, BA, MD, MPA, MEd, MIS (candidate)
CCPE (Senior Medical Advisor and Editor-in-Chief, Public Health Agency of Canada)
Suzanne Boucher, BSocSc., BScN, RN
(Senior Policy Analyst, Public Health Agency of Canada)
Ava John-Baptiste, PhD (Associate Professor, Western University)

> *Infectious diseases remain one of the biggest risks facing humankind. Few events are capable of equal damage to human lives and livelihoods. Yet the global community spends relatively little to protect populations from the risks of pandemics. Compared with other high-profile threats to human and economic security… we are underinvested and underprepared. This is the neglected dimension of global health security.*
>
> — Commission on a Global Health Risk Framework for the Future

Jason sighed, trying to not let his frustration show. Marissa was lying in a bed in the Ebola Treatment Centre (ETC). Jason had asked Marissa a question. As he waited for her to respond, a bead of sweat rolled down his forehead. It was extremely hot inside the ETC and he was wearing full protective gear; he was feeling very frustrated. Jason Fitzgerald was an epidemiologist from the Public Health Agency of Canada, responsible for contact tracing to address the Ebola Virus Disease (EVD) outbreak in the Central African country of the Democratic Republic of the Congo (DRC). This meant tracing the virus's spread by tracking down the people, or 'contacts', who had come into contact with an Ebola-infected person. According to the World Health Organization, contact tracing has three components: i) identifying people who have come in contact with an infected person by asking questions, ii) creating a list of all contacts and informing them; and iii) following up with contact (Exhibit 1). The experimental Ebola vaccine, the vesicular stomatitis virus-based Ebola virus vaccine (VSV-EBOV), would then be made available to them. In a way, Jason and other epidemiologists were disease detectives, trying to identify the human interaction network of the Ebola virus in order to halt it from being transmitted further.

In theory, contact tracing seemed easy enough. Once an EVD case was confirmed, Jason would interview that person to determine their contacts. From there, contacts would be assessed twice each day for a total of 21 days (the incubation period of the virus) to look for EVD symptoms. Any listed contacts would also be offered the VSV-EBOV vaccine. However, many factors complicated contact tracing. To name a few: many contacts were suspicious of the vaccine and questioned whether the Ebola virus really existed; many refused to list their contacts; and contact tracing was additionally hampered by the large number of locals who mistrusted foreigners.

Although Jason made every effort to do his job well, at times it was clear to him that his European ethnicity increased the difficulty of performing his duties in the DRC. Knowing the importance contact tracing played in controlling an outbreak, Jason became increasingly frustrated when his work did not go smoothly, and this happened a lot. It was difficult to piece together the path of the contagion's spread when people provided very little information, or provided conflicting or confusing information, leading to an incomplete and unreliable assessment.

Marissa Kayembe was an elderly lady who had begun exhibiting symptoms of EVD one week earlier. Although Marissa had listed only a handful of contacts, after having spoken with these contacts, Jason was informed by another member of the community that Marissa may have attended a large birthday party six days earlier. However, Marissa had not mentioned this during her previous conversation with Jason. If this was true, it was highly probable that Marissa had exposed others at the party to the Ebola virus. As such, anyone attending the party needed to be listed as a contact, monitored, and offered the VSV-EBOV vaccine. The first step in this process was confirming that the party had actually happened.

In response to Jason's probing questions, Marissa seemed unwilling to provide more information. Jason could sense her annoyance and resentment building toward him, and he wondered whether he should risk angering her further by asking her a few more questions. He still had not confirmed whether the party had occurred. Before he could decide, Marissa yelled, "You have already invaded my privacy by tracking me down and questioning me once before! You have no right to do so and you don't belong here!" Surprised by her sudden outburst, Jason opened his mouth to respond, but he was immediately ushered out of the room into the ETC's triage centre by a nurse who had been watching nearby.

EBOLA VIRUS DISEASE OUTBREAKS

EVD is a highly infectious, yet somewhat rare, zoonotic virus. The first cases of Ebola were discovered in 1976 proximal to the Ebola River in the DRC (Feldmann et al., 2003). The local incidence of hemorrhagic fevers, most commonly Lassa fever, motivated health professionals in the region to specialize in these types of diseases to adequately meet the unique needs of the local population. The EVD virus is endemic to regions within Africa, and several small outbreaks have been managed and contained there over the past few decades, often in isolated rural communities. A person with an EVD infection typically presents with fever, headaches, nausea, and overall weakness in the first two to 21 days after infection. Because these are all nonspecific symptoms, it is difficult to diagnose Ebola during the early stages of infection. As time progresses, the symptoms worsen and become more specific. Although social media reports have led much of the general public to associate Ebola infection with blood pouring from bodily orifices, this symptom is in fact rare. When a patient presents with EVD symptoms, including nonspecific symptoms, that patient is infectious.

BACKGROUND

Regional History of Ebola Outbreaks

On August 1, 2018, the DRC declared an EVD outbreak, occurring this time in the rural North Kivu and Ituri provinces. This was the 10th outbreak to occur in the DRC since Ebola was discovered in 1976. Still an active, ongoing outbreak, as of December 1, 2019, the number of Ebola cases (both confirmed and probable) had surpassed 3,398 (Médecins Sans Frontières [Doctors without Borders], 2019a). Based on the total number of cases, this is the second largest Ebola outbreak to occur in the world. The largest outbreak occurred in the West African countries of Sierra Leone, Guinea, and Liberia from December 2013 to June 2016, commonly referred to as the 'West African outbreak'. The unspeakable horrors that occurred during the

West African outbreak were still recent in the memory of local communities and responders. Thus, the current outbreak prompted massive domestic and international action aimed at containing the epidemic. Despite on-the-ground action in the DRC since August 2018, in mid-2019, the number of people infected was still rising. Although it took 224 days to reach 1000 infected patients, it took just another 71 days to reach 2000 cases. By early June 2019, the virus had spilled over from the DRC into the neighbouring country of Uganda and, by the middle of July 2019, the first case of Ebola emerged in Goma, a large, urbanized city in the DRC with a population of one million people. The spread of Ebola from DRC's rural provinces into more urbanized areas prompted the World Health Organization (WHO) to declare the Ebola outbreak in the DRC a Public Health Emergency of International Concern (PHEIC) on July 17, 2019. The declaration of a PHEIC indicates that a threat to global health security exists (World Health Organization, 2016a).

GLOBAL HEALTH SECURITY

Many believe that the state has an obligation to protect its citizens from the threat of infectious diseases. Global health security is defined as "the activities required to minimize the danger and impact of acute public health events that endanger the collective health of populations living across geographical regions and international boundaries" (WHO, 2019a). Investments in global health security can help prevent the spread of infectious diseases across borders and ensure preparedness in the case of a cross-border infectious disease threat. Global health security allows countries to "prevent, detect, and respond to infectious disease threats at the source… [helping to] reduce morbidity and mortality" (Kashef, 2018)). A lack of global health security infrastructure can leave populations vulnerable and open to emerging and re-emerging diseases.

In addition to undesirable health outcomes, an outbreak leads to troublesome economic and social burdens (Huber, Finelli, & Stevens, 2018). For example, during the first outbreak in West Africa, approximately 4.7 million children were unable to attend school for more than six months in the affected countries as a direct result of the epidemic (Huber, Finelli, & Stevens, 2018). The World Bank estimated that, in 2015 alone, the three affected countries lost $2.2 billion USD in combined gross domestic product because of the Ebola outbreak (Centers for Disease Control, 2019a). Less noticeable to those outside of the affected regions, but still profoundly devastating, is how an outbreak can result in dire consequences to individuals suffering with conditions unrelated to the virus. Although Ebola caused a high number of deaths in affected countries during the first outbreak, another 10,700 preventable deaths occurred from Malaria as a result of diminished health service capacity. When considering other prominent diseases of concern that took a backseat to EVD, such as HIV or tuberculosis, the number of preventable, non-Ebola-related deaths that occurred during the outbreak is immense. The social, economic, and health burdens associated with outbreaks underscore the need for greater global health security, especially in resource-poor environments.

For many in developed countries, the threat of infectious disease is not a primary concern, however infectious diseases do not discriminate between boundaries or borders. Recent infectious disease outbreaks attest to this – the H1N1 swine flu, Zika virus, and the West African Ebola outbreaks, all classified as PHEICs by the WHO, were not constrained just to underdeveloped countries, but instead impacted many countries on an international scale.

Global health security is essential to ensure that all countries, and the people who live in them, are safe from the destructive forces of infectious diseases. Countries that are recovering from civil wars and political instability have notably inadequate health systems and significant limitations in government health capacity. Many countries in Africa and South Asia have

experienced war, and combined with the prevalence of a large number of tropical diseases, this means that infectious disease outbreaks have an increased likelihood of originating in these countries (Lobo et al., 2011). Countries at risk have inadequate capacity to invest in global health security and require external aid. Without assistance, these countries are at a greater risk of succumbing to infectious disease threats and subsequently compromising national health security (Connolly & Heymann, 2002). As the international leader in the area of global public health, the WHO is committed to ensuring that the health security of its member states is maintained.

HISTORICAL CONTEXT OF THE DRC AND EBOLA VIRUS OUTBREAKS

Perhaps the most important factor in responding to the current Ebola outbreak is an understanding of the DRC's historical context of colonialism, governmental corruption, and postcolonial conflict. Armed conflict and ongoing political turbulence have forced many Congolese citizens to endure gross infringements on their human rights. In addition to witnessing years of military conflict, citizens underwent decades of colonizing rule. In 1870 European foreigners came to and eventually took forcible control of the nation. The DRC was once known as the "Belgian Congo" (Banza et al., 2009), and became the DRC after Congolese forces overthrew the foreigners in 1960 (Office of the Historian, 2017). In 1960, the country gained independence. Political instability grew out of the economic and social destruction that had been caused by colonialism. For decades, the DRC endured corruption, abuse, and armed conflict. Despite multiple reports of state- and rebel-sponsored rape, murder, violence, and other abuses occurring in the region over the past 50 years, limited international support was provided compared with the influx of international assistance available to help with the current EVD outbreak. The number of foreigners present to help with the modern Ebola epidemics, but not with the past civil wars or other DNC conflicts, left these communities to face a difficult reality – the rest of the world only offers help when they too are threatened. Without the risk to the Western world's health security, many in the DRC believe that they would not have been helped. This belief was reinforced during the first EVD outbreak, when Western nations selectively helped the DRC only when their own vulnerability became apparent (Sabeti & Salahi, 2018). A local responder said about the global community's initial lack of response: "besides witnessing the Ebola cases, realizing the world was waiting for West Africans to die off" was the worst aspect of the Ebola outbreak (Sabeti & Salahi, 2018). Only when the outbreak worsened, and a serious global health security risk was evident, did powerful countries choose to intervene. For communities in the DRC, the historical framework is a distressing reminder of foreign oppression, exploitation, and inequity. Juxtaposing the history of the region with the international aid response makes it clear why many local citizens distrust foreign nationals.

Instead of working *with* communities, organizations seem to work *on* communities by demanding, rather than asking, that they take action. For example, people are ordered to visit the ETCs or stop cultural practices involved with traditional burial rituals. Some communities, who had already endured great suffering losing members of their community to Ebola, were told *they* had caused the deaths as a result of traditional cultural or religious practices. Because these communities have been conducting these practices for decades, without experiencing an EVD epidemic, they presumed these deaths were, in fact, some form of politically motivated genocide. Community members were told by foreign organizations to visit ETCs if they were feverish, but this intervention failed to account for the fact that some local people rely on home-based remedies rather than seeking conventional medical care from a health facility. Additionally, communities quickly realized that many who entered ETCs never returned; thus, ETCs became associated with death instead of therapy, and people avoided going to them to receive care. Some people believe Ebola is a conspiracy to punish the

Congolese to achieve political and financial gain. Local people who do believe Ebola is real may be shunned or stigmatized for siding with foreigners (Sabeti & Salahi, 2018). Unfortunately, some community members have attacked the people working to contain the Ebola outbreak. For example, a WHO epidemiologist delivering care at an ETC was shot and killed in April 2019, and in November 2019, three EVD responders and a police officer guarding an EVD coordination office were killed and another six were injured.

Médecins Sans Frontières is one of the few active humanitarian aid organizations involved in the DRC's Ebola response that has provided on-the-ground aid to the region for other medical crises as well. However, to protect the lives of its staff and patients, the organization was forced to suspend delivering life-saving health care in its ETCs, which allowed the virus to be transmitted freely and left individuals infected with Ebola with limited medical support. During the West African outbreak, there were reports of nurses in Sierra Leone who treated patients at ETCs and then had to sleep there at night because they were shunned by their communities for taking part in the Ebola response. In reference to community mistrust a local responder said of her experience of Ebola in Beni:

> My husband was killed in a massacre in Beni. At that time, all I wanted was some organization to come protect us from the killings, but no international organization came. I have had three children die of malaria. No international organization has ever come to work in this area to make sure we have access to health care or clean water. But now Ebola arrives, and all the organizations come…if you cared about us you would ask us our priorities. My priority is security and making sure my children don't die from malaria or diarrhea. My priority is not Ebola. That is your priority (Médecins Sans Frontières, 2019b).

Local distrust and suspicion deters local health care workers from responding to Ebola. This reduces the levels of community ownership of, and commitment to, the Ebola response, and leaves foreign aid groups to manage the emergency. Médecins Sans Frontières has stated that "it will not be possible to end the [Ebola] outbreak if there is no trust built between the response and the affected communities", highlighting that medical expertise alone will not be sufficient to end the outbreak (Médecins Sans Frontières, 2019a).

Public perception plays a large role in outbreak response, and the West African Ebola outbreak was no exception (Sabeti & Salahi, 2018). During the peak of the outbreak, the public perception of the international community caused another type of epidemic – an epidemic of fear. West African students were not permitted to return to European universities where they had been studying, and Black people were denied entry into a restaurant in South Korea (Sabeti & Salahi, 2018). The epidemic of fear created an environment that facilitated the propagation of incorrect Ebola-related information, leading to an increased yet misconstrued awareness about Ebola in the general public. For example, *The New York Times*, considered a reputable news source, published an article in June 2019 that states Ebola is "transmitted through physical contact" and that "symptoms take days to manifest themselves, elevating the risk of infection" (Gladstone, 2019). Both statements are inaccurate. Ebola is transmitted through contact with infected fluids, not physical contact such as touching elbows. Also, a longer incubation period does not mean that an individual is "more infectious" (Centers for Disease Control, 2019b). If someone is asymptomatic, they are not able to spread Ebola. Within the global community, the word *infectious* has become synonymous with *contagious*, even though an infection refers to the pathogenic cause of a disease and contagious refers to how it is spread. All contagious diseases are infectious, but not all infectious diseases are contagious. Although Ebola is an infectious (viral) disease, it is only moderately contagious.

This is a result of how the disease spreads, which is through contact with infected bodily fluids. Because fluids such as stool, tears, and blood are not generally exposed to the environment, and because EVD is not an airborne pathogen, the virus is considered moderately contagious. However, if a person comes into contact with any of these fluids from an infected patient, the probability of contracting the disease is very high, making the virus highly infectious. This subtle difference is important to note because misuse of the two terms (among other factors) led to unwarranted quarantining, stigma, and overall global hysteria during Ebola outbreaks (Sabeti & Salahi, 2018).

Around the world, the unwarranted epidemic of fear moved the focus of the response away from healing the suffering individuals and communities in West Africa to protecting people in developed nations who had a very low probability of contracting the disease. As Michiel Hofman and Sokhieng Au point out, “fear of the disease and fear of the diseased became one, as Ebola became the poor, sick, black African, further conflated with the continent of Africa itself, continuing the ‘long and ugly tradition of treating Africa as a dirty, diseased place’” (Hofman & Au, 2017).

The current outbreak rages on, leaving significant social and economic consequences and highlighting major health system deficits in the region. Many people wonder why the current epidemic is difficult to manage despite the experience gained from the West African outbreak. The narrative of the DRC outbreak is still unfolding, and its future remains to be seen, with many experts stating that the end of this PHEIC is nowhere in sight.

INTERNATIONAL HEALTH GOVERNANCE

Infectious diseases do not recognize international borders. Although any one country may have a policy to prevent the spread of infectious diseases, it is necessary to have a global governing body that works with each of these nations. The WHO has long been recognized for its positive contribution to global public health and international governance, particularly in the area of managing the spread of infectious diseases.

The WHO is one of 17 United Nations agencies and comprises 194 member states. The decision-making body of the WHO is called the World Health Assembly, with representatives from each WHO member state meeting annually at the WHO headquarters in Geneva, Switzerland. Dr. Tedros Ghebreyesus, the Director-General of the WHO, has a vision of ensuring that everyone, everywhere can lead a healthy and productive life. Dr. Tedros hopes to bring this vision to fruition by focusing on five priority areas during his five-year term – universal health coverage, health emergencies, women’s, children’s, and adolescents’ health, health impacts of climate and environmental change, and a transformed WHO (WHO, 2019b). The current EVD outbreak in the DRC generally falls under the umbrella of health emergencies, but it is relevant to the other thematic areas as well. The WHO’s response to infectious disease threats is conducted in collaboration with member states in accordance with the International Health Regulations ([IHR] 2005), the universal treaty that governs global health security threats related to infectious diseases.

International Health Regulations (2005)

Action taken to protect nations from international disease threats have come to be known as global health security. A country’s role in ensuring the health of the public, in conjunction with ensuring global health security, emphasizes that public health and health securitization are inextricably linked. Before adopting the global health security strategy, the WHO had adopted an international health strategy focused on advocating for health as a human right for people in low and middle-income countries. However, there was limited political interest in having

member countries allocate resources to this intervention. With increasing international trade and travel, the political discourse surrounding disease threats began to focus on the risk of disease to people, instead of examining the reality for people who already had these diseases. This subtle shift in the political discourse on global infectious disease governance led to the development of the IHR in existence today. The global focus shifted from achieving human health rights in developing countries to considering the risk, or potential risk, of infectious disease threats in all countries. The latter "appealed to the national security, economic, and foreign policy interests of nations [and] powerful states" (Fidler, 2015), and sought to increase collective health security instead of just focusing on building capacity within developing nations.

Thus, the IHR aims to ensure global health security via protection against infectious disease threats (Fidler, 2015). The 2005 regulations achieve this by setting standards, or regulations, that are legally binding for all nations. Countries must adhere to these standards to allow for improved global health security. These regulations are the international framework in existence today that is designed to govern infectious disease threats and prevent the international spread of disease.

The political will to protect nations from the threat of pandemics and infectious diseases in general was developed over 150 years of discourse on this topic and culminated in the current IHR. Beginning in 1851, the first International Sanitary Conference was held in Paris, France, with those in attendance attempting to agree on a global strategy to combat the more serious infectious diseases of the time: cholera, plague, and yellow fever. However, no global agreements were reached. The fourth World Health Assembly in 1951 resulted in the adoption of the International Sanitary Regulations, the predecessor to the IHR. The 22nd World Health Assembly, held in 1969, led to the International Sanitary Regulations being replaced by the IHR (1969) to help countries increase their capacity to respond to the six prominent infectious diseases of the time: cholera, plague, smallpox, typhus, yellow fever, and relapsing fever (WHO, 2016a). The IHR (1969) stipulated that member states were required to notify the WHO about any cases of the aforementioned six diseases within their respective country, but they were not required to notify them about other diseases. However, the subsequent increase in international trade and travel in the latter half of the 20th century, in conjunction with the 2003 occurrence of severe acute respiratory syndrome, also known as SARS, prompted an update of the IHR to better address concerns surrounding global disease threats. The IHR expanded mandatory notification beyond six infectious diseases. The IHR (2005) was adopted at the 58th World Health Assembly and included a *global health security* resolution and notification of any disease threat to the WHO. Specifically, the IHR (2005) requires that the WHO is notified of any "existing, new, and re-emerging disease" that could be considered a PHEIC.

Public Health Emergency of International Concern

A PHEIC is a public health emergency occurring in any country that could impact countries other than the affected state and have global reach and consequences. The declaration of a PHEIC serves as a universal indicator that a nation's global health security is at risk and that the affected country is in critical need of support. A PHEIC reinforces political resolve and increases financial support to manage and control the threat (Gostin & Katz, 2016), especially when other countries are worried that the threat will reach their borders (Fidler, 2015).

Under the IHR (2005), member states are required to follow Annex 2 of the IHR (2005) (Exhibit 2) to gauge whether the WHO should be notified of an event such as an infectious disease outbreak. The decision for a country to notify the WHO of an event that may constitute a PHEIC is based on four criteria (World Health Organization, 2006):

1. Seriousness of the public health impact of the event.
2. Unusual or unexpected nature of the event.
3. Potential for the event to spread internationally; and/or
4. The risk that restrictions to travel or trade may result because of the event.

When the aforementioned criteria are met, the WHO can subsequently take measures to "ensure appropriate technical collaboration for effective prevention of such emergencies or containment of outbreaks and, under certain defined circumstances, inform other states of public health risks where action is necessary on their part" (World Health Organization, 2016a). An IHR Emergency Committee, consisting of international experts, is assembled to provide guidance and technical expertise to the Director General of the WHO in order to aid in their decision-making process of declaring a PHEIC. The declaration of a PHEIC depends on the discretion of the Director-General of the WHO, based on the evidence and recommendations presented by the IHR Emergency Committee. The purview of the IHR Emergency committee includes (World Health Organization, 2016b):

a) Whether the event constitutes a PHEIC;
b) The Temporary Recommendations that should be taken by the country experiencing an emergency of international concern, or by other countries, to prevent or reduce the international spread of disease and avoid unnecessary interference with international trade and travel; and
c) The termination of a PHEIC.

If the WHO Director-General decides that the event in question does indeed constitute a PHEIC, the temporary recommendations put forth are upheld. These recommendations expire every three months, and new recommendations are provided depending on the status of the situation, as assessed by the IHR Emergency Committee (WHO, 2016b). In the case of an outbreak, a PHEIC is declared to be over when the four criteria outlined above are no longer satisfied.

The threshold for declaring a PHEIC is ambiguous. As the primary leader in global public health, the actions of the WHO are under intense scrutiny from the entire world. WHO decision-making during the first West African Ebola outbreak were heavily criticized. Dr. Margaret Chan's decision to declare a PHEIC for this outbreak was deemed to be too late by much of the global community and, in hindsight, Dr. Chan agreed (Fidler, 2015). Similarly, the WHO was criticized for unexpectedly refraining from calling a PHEIC during an IHR Emergency Committee meeting on June 14, 2019 regarding the ongoing outbreak in the DRC. Dr. Tedros has stated on numerous occasions that there is a "shared responsibility to end this outbreak" and that "the impact on public health and the economic ramifications [of Ebola] can expand far beyond one country or continent" (WHO, 2019c). His decision to declare a PHEIC on July 17, 2019 was welcomed by the global health community.

Declaring the ongoing outbreak in the DRC as a PHEIC will increase the necessary political action, financial support, and overall response efforts needed to contain the outbreak. Although a PHEIC does not mandate increased support to address the outbreak, the declaration of a PHEIC creates intense political pressure for countries to support the response.

CONCLUSION

Jason knew that the contextual nature of the outbreak was complex and challenging, and responding to it required innovative and perhaps unconventional strategies that were still

evolving. It was an irrefutable fact that medical expertise alone would not be able to resolve the outbreak. The high volume of newly confirmed EVD cases that were not listed as contacts, on some days totaling 80% of newly confirmed EVD cases, substantiated this suspicion. Every day, a new, confirmed EVD case that was not previously listed as a contact compromised the outbreak response, and increased the risk to the Congolese people. Jason was certain the biggest factor impeding the entire Ebola response was the existing community mistrust and suspicion toward nearly anything that related to a foreign national presence. It seemed likely that the best way forward for combatting community mistrust was to involve the community in every aspect of the Ebola response. This would mean listening to the community's needs and concerns, respecting their choices when it came to managing health, and working *with* communities, not on them.

Jason had been hoping to leave the ETC with additional information on Marissa's contacts to add to the contact database he was working on. Feeling dejected and frustrated, he headed back to the headquarters to provide a final update to his supervisor before going to his hotel for the night. As he walked along, he was uncomfortably reminded of the luxury he was afforded as a foreign EVD response worker; if he got sick, he would be repatriated and receive the best medical care back in Canada. Local people such as Marissa would experience no such intervention. Since Marissa had gotten sick she was forced to stay in the ETC, and once discharged would be heavily stigmatized. Jason's frustrations paled in comparison to the difficulties faced by Marissa, other community members, and local community health workers. Community health workers, including nurses and doctors, were risking their lives to continuously deliver care with a workday that extended beyond 6pm. As Jason walked on the dirt path, deep in thought about how to improve community ownership and participation in the Ebola response, the words of David Fidler echoed in his head.

David Fidler, a lawyer specializing in international law, had commented on the predictable nature of the Ebola outbreak (Fidler, 2015):

> …what happened was anticipated: a dangerous virus spreads across borders and thrives in urban and rural environments in developing countries that lack health-sector capacities and struggle with the pathologies that afflict post-conflict societies. The outbreak was not a global health riddle wrapped in a mystery inside an enigma. It was an epidemiological probability wrapped in public health expectations inside a purpose-built governance strategy. Yet, tragedy ensued, measured by the dead, the infected, the stigmatized, and the social and economic costs rippling through societies least able to bear setbacks to their development (p. 181).

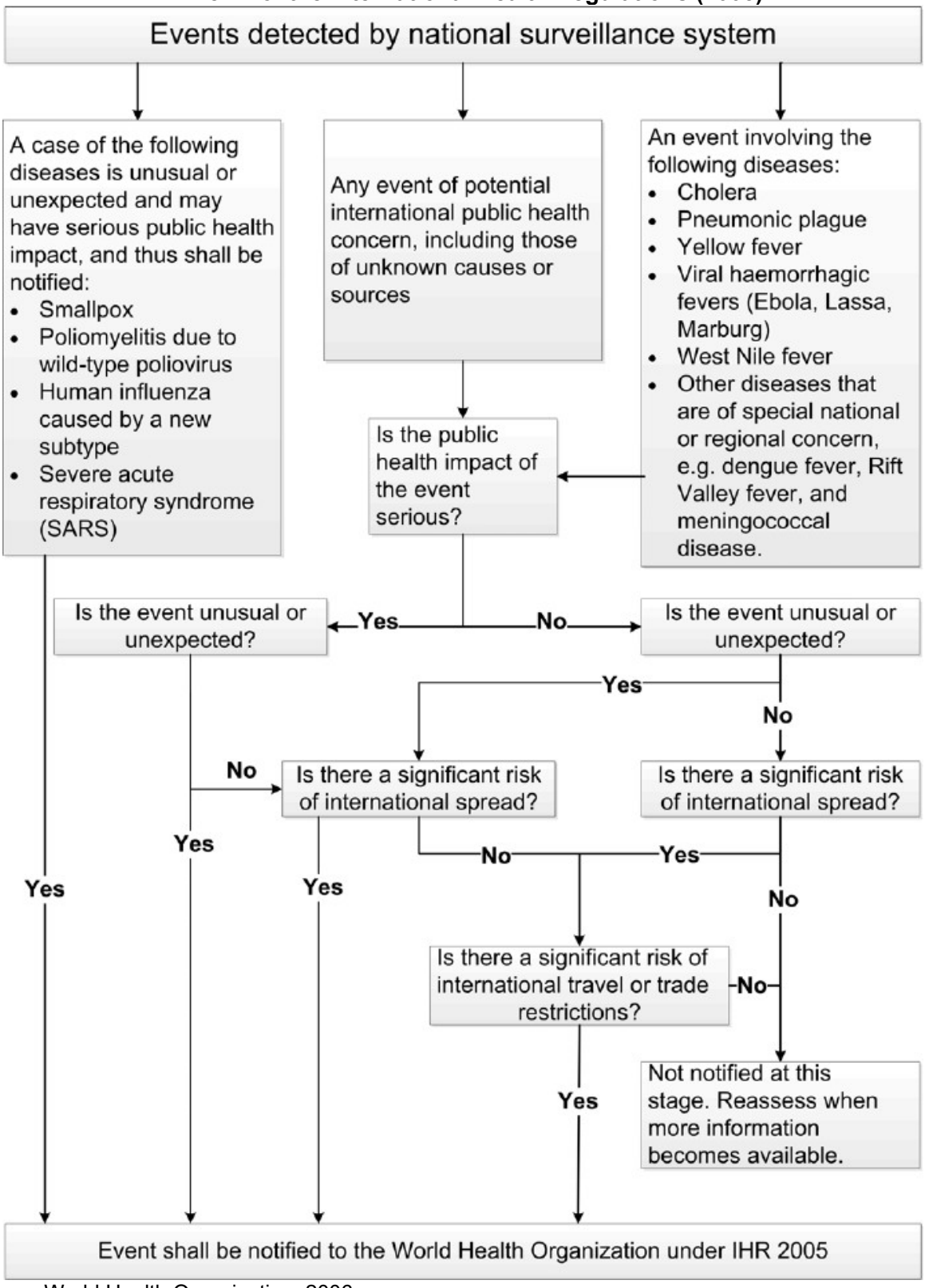
EXHIBIT 1
Contact Tracing Components

CONTACT IDENTIFICATION	CONTACT LISTING	CONTACT FOLLOW-UP
Once someone is confirmed as infected with a virus, contacts are identified by asking about the person's activities and the activities and roles of the people around them since onset of illness. Contacts can be anyone who has been in contact with an infected person: family members, work colleagues, friends, or health care providers.	All persons considered to have contact with the infected person should be listed as contacts. Efforts should be made to identify every listed contact and to inform them of their contact status, what it means, the actions that will follow, and the importance of receiving early care if they develop symptoms. Contacts should also be provided with information about prevention of the disease. In some cases, quarantine or isolation is required for high risk contacts, either at home, or in hospital.	Regular follow-up should be conducted with all contacts to monitor for symptoms and test for signs of infection.

Source: World Health Organization, 2017.

EXHIBIT 2

Annex 2 of the International Health Regulations (2005)



Source: World Health Organization, 2006.

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INSTRUCTOR GUIDANCE

Going Beyond the Virus: Understanding the Drivers of the Ebola Virus Outbreak

Reshel Perera, BSc, MMASc, MPH (Class of 2019)
Michel Deilgat, CD, BA, MD, MPA, MEd, MIS (candidate), CCPE
(Senior Medical Advisor and Editor-in-Chief, Public Health Agency of Canada)
Suzanne Boucher, BSocSc., BScN, RN
(Senior Policy Analyst, Public Health Agency of Canada)
Ava John-Baptiste, PhD (Associate Professor, Western University)

BACKGROUND

The protagonist, Jason Fitzgerald, faces challenges performing contact tracing during an Ebola outbreak in the Democratic Republic of the Congo. This represents a small fraction of the many difficulties in responding to the 2018-2020 Ebola outbreak. Despite the best efforts of national and international organizations, the outbreak isn't close to being contained. In fact, the virus threatens to spread to neighbouring countries, triggering the World Health Organization to declare the outbreak a Public Health Emergency of International Concern (PHEIC) on July 17, 2019. The Ebola outbreak is a dangerous, complex, and ongoing public health concern with serious national and international implications. The case illustrates important factors involved in outbreak response.

As such, this case discusses the stakeholders involved in international health governance and the role of global health security in the political and international discourse on infectious disease control. The case illustrates the challenges of outbreak responses and sheds light on the role of regional sociocultural factors in fuelling the ongoing Ebola outbreak.

OBJECTIVES

1. Analyze global health governance and global health security and discuss the roles of organizations in epidemic management.
2. Adopt a systems-thinking approach to understand complex and multifaceted challenges in outbreak responses.
3. Formulate alternative solutions to current practices in global outbreak responses.

DISCUSSION QUESTIONS

1. List the factors involved in the ongoing Ebola outbreak in the Democratic Republic of the Congo.
2. Define global health security and describe the World Health Organization (WHO) International Health Regulations. How does the WHO determine when a PHEIC is declared?
3. What are the implications of declaring a PHEIC?
4. Why is medical intervention inadequate to reduce the number of Ebola infections and end the outbreak?
5. How can the outbreak response be improved?

KEYWORDS
Ebola outbreak; Ebola Virus Disease; global health security; infectious disease governance; international health regulations; outbreak response; Democratic Republic of the Congo; foreign complacency.