Understanding International Grand Challenges

The Governance of Epidemic Responses in Conflict Zones

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ABSTRACT

Around the world, millions of citizens are trapped by a combination of two major disasters; namely, violent conflicts and epidemics. Easily treatable diseases become virtually impossible for international organizations to combat in the midst of a war zone. By performing a literature review on complex humanitarian emergencies occurring in the last two decades, we explored the characteristics of governance that affect the control of an infectious disease outbreak in a conflict zone. As a result of the literature review, we found that a lack of trust between actors prolonged the emergency and also increased the likelihood of future emergencies to occur. There is need for more research into the strategies of global response organizations and working in zones where the formal governance structures have collapsed. Additionally, as a precursor to eliminating bottlenecks, future studies should look more closely at the hindrances faced by each actor during complex emergencies.

Introduction

The majority of deaths caused by modern epidemics are preventable, which is what makes them particularly tragic. Simple methods for cholera prevention have been known to the scientific community since at least the 19th century; nonetheless, researchers have estimated 2.8 million cases and 91,000 deaths annually due to endemic *Vibrio cholerae* (Ali, Nelson, Lopez, & Sack, 2015). Preventing cholera is not a technically challenging problem – all water treatment plants in the developed world eliminate this threatening microorganism. The problem is also relatively uncomplicated for medical professionals – an individual infected with cholera who undergoes medical treatment through oral rehydration therapy has a 99% survival rate (CDC, 2017).

The largest burden of high-mortality infectious disease outbreaks (such as pneumonia, HIV/AIDS, tuberculosis, malaria, and diarrheal pathogens), lies with low-income countries that are experiencing or recovering from violent conflicts (Institute of Medicine US, 2010). It can be seen that a contagious disease outbreak, even an easily preventable or treatable one, becomes complicated by the instability of civil war. Modern conflict zones are more intricate than ever before, being frequently characterized by prolonged insurgencies and intra-state fighting. Recent examples include the crises in Yemen, Syria, Afghanistan and Sierra Leone, Liberia, and the Democratic Republic of Congo.

The consideration of communicable diseases within the context of conflict zones brings this challenge into the arena of a 'super wicked' problem, as originally described by Rittel and Webber (as cited in Cagnin, Amanatidou & Keenan, 2012). By its nature, a super wicked problem does not have a clear solution or actor that is unilaterally capable of action; yet, the urgency and scale of the problem demands that leaders take action even in the face of uncertainty. Even relatively simple medical situations such as cholera become extremely complicated to manage when considered within a fractured state. In conflict scenarios, consequences of epidemics may be exacerbated by factors such as: an inability to collect health data, a displaced or transient patient population, a distrust in leadership, and wartime conditions such as malnutrition, among many other complications.

The scenario of an epidemic occurring in a conflict zone fits under the umbrella of a **complex humanitarian emergency**, where conflicts often co-occur with demographic, environmental, economic, and social instabilities. According to Léa Macias, the concept of "complex emergencies" is used by the international humanitarian community to highlight how modern conflicts frequently involve numerous stakeholders and actors, with complicated interactions between concurrent crises such as environmental degradation, economic collapse, or endemic poverty (Macias, 2013).

The study of how complex emergencies is urgent because ineffective governance leads to high mortality, a setback of development goals, and a cycle of instability that can may continue even after the cessation of active fighting (Macias, 2013). Understanding the interactions between infectious disease outbreaks and civil conflict is critical for actors attempting to prevent or mitigate future intractable conflict [*] . Given this complexity, the following article attempts to understand the governance of complex humanitarian emergencies and address the following research question:

"What characteristics of governance affect the control of an infectious disease outbreak in a conflict zone?"

This article builds upon previous research regarding the connection between epidemics and violent conflict, a link which has been widely studied (Marshall, 2016; Wise & Barry, 2017; McPake et al., 2015), and offers an analysis of complex humanitarian emergencies using the "Three Pillar" analytical framework originally developed by Borras and Edler (2015). Through this framework, the authors present a standardized approach to analyzing the governance of change within complex social-technical systems. The "Three Pillars" focus on: (1) the actors involved in change; (2) the instruments that allow them to act; and (3) when those actions are or are not accepted by society. By applying this framework, we aim to understand the governance of epidemics in conflict zones within the context of all international grand challenges.

From this method, an analysis of the characteristics and dilemmas of controlling an epidemic in a conflict zone is presented in chapter 2. Chapter 3 presents the results of the analysis. The conclusion and discussion deriving from the analysis is presented in chapter 4.

2. Analyzing the governance of a complex humanitarian emergency

Despite being both easily preventable and treatable, cholera has infected over 700000 people and killed at least 2000 in Yemen since a civil war began two years ago (WHO, 2017). An alarming 20.7 million people in Yemen currently need humanitarian support, with some 9.8 million in acute need of assistance (OCHA, 2017). Due to the conflict, Yemen began to experience widespread poverty, weak law enforcement, and widely reported human rights violations. On top of that, deliberate military tactics to demolish the civilian sphere have turned an already weak nation towards total collapse. International human rights organizations have accused warring factions of conducting airstrikes that have unlawfully targeted civilian infrastructure, such as water wells, bottling facilities, health facilities, and water treatment plants; allowing disease to flourish (OCHA, 2017). It is the largest cholera outbreak in the world – so who is responsible for stopping it?

Part I: Who are the actors that can mitigate epidemics in conflict zones?

Each disease outbreak and conflict is distinct. It is dangerous to generalize– particularly with two of the oldest and most dangerous phenomena in human history. However, we can draw similarities amongst unique outbreaks and conflicts at the conceptual level through the reasonably safe assumption that "internal actors" and "external actors" are distinguishable within any complex humanitarian emergency. .

By **internal actors**, we refer to the government, national military, healthcare network, local nongovernmental organizations, and other in-country groups. By **external actors**, we mean the United Nations, global non-governmental organizations, and other international response groups. The strength of external actors lies in their money and expertise; but they often lack in-country knowledge, context, and community acceptance. The reverse is generally true for in-country groups, which have the authority, legitimacy and local understanding, while their resources may be entirely destroyed, or depleted.

Because civil conflict is intrinsically divided, we must demarcate between internal actors. For simplicity, we will refer to the warring parties as **government forces** and **insurgents**, although this may be a gross over-simplification of actual political complexities for a given conflict. For purposes of this report, it is enough to note that functional governance is absent and that civilians are caught in the crossfires between warring actors. A simplified distribution of these actors are shown in Figure 1

[*] For our study of the governance structures involved in complex crises, it is sufficient to note that underlying instabilities may often interact and co-occur to increase the intractability of violence. Whether state violence *causes*, or is *caused by* co-occurring instabilities (e.g. underdevelopment, food insecurity, disease outbreak) is beyond the scope of this article.

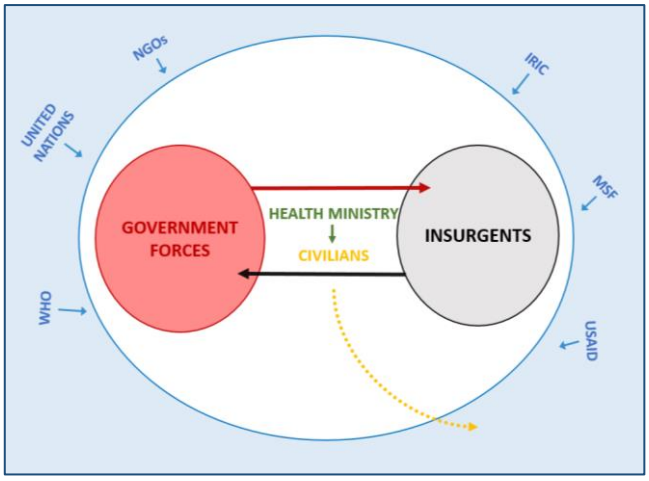

Fig. 1 - (a) Distribution of Actors in a Conflict "Bubble"

The preceding image illustrates that citizens and health care workers fighting the spread of disease are caught in between the government and insurgency forces, within a conflict "bubble." At the same time, external humanitarian actors are trying to get *inside* the bubble. Because government actors are likely to be preoccupied, external response agencies may be held up by not receiving the required permits, approvals, or customs clearance. This severely limits the ability of external actors to get quick and accurate internal data concerning the disease outbreak.

Because of the conflict, the major actors may not be aligned in their interests to stop the disease. For example, in September 2017 warring actors in Syria attacked a WHO medical facility, destroying tens of thousands of measles and polio vaccines. An overt attack on healthcare systems is particularly damaging considering that vaccination programmes in Syria have dropped from 91% to as low as 45% since the outbreak of the civil war in 2010 (Sharara and Kanj, 2014). The denial or outright destruction of medical relief has led to a resurgence of polio throughout the country, which calls into question the desire of internal actors to contain the epidemic.

Among external actors, the domain of international humanitarian aid has become increasingly professionalized in recent years, with its own qualifications, standards, academic programs, and specialized training. The fields of expertise of conflict mitigation and epidemic response rarely overlap, with different tools and qualified professionals. However, when these events occur concurrently in the same geographic location, combined expertise is needed, which is why the United Nations is generally looked to for leadership. Currently, the technical assistants of the World Health Organization are the most well-known experts for accessing epidemics during complex emergencies. WHO specialists are continually seeking methods for innovating data collection and rapid diagnostics during difficult conditions, however, progress has been too slow to meet the increasing demands for information.

The capacity of even the most powerful external experts to navigate the crisis is limited at best. It is likely that most external agents would not already have an in-country presence in the affected area prior to the crisis. However, the combined presence of war and an epidemic creates a complex humanitarian emergency situation, which necessitates that local actors request the help of international players with more resources and capabilities. Within the framework of Borras and Edler, the complex humanitarian can be seen in itself as an **opportunity structure**, which gives actors a chance to implement changes to a socio-technical system. External actors may suddenly be able to intervene in a country where they would not normally have authority.

Part II: How do actors influence change during a complex emergency?

Internal and external agents have different means at their disposal for controlling an infectious disease during civil conflict. Insurgent forces, due to their "illegitimacy" as a non-state actor, typically have less means or incentive to address an epidemic. Thus, for purposes of this analysis we will focus on the instruments held by the two most powerful players, the national government and the WHO. By "instruments," we refer to the specific mechanisms by which actors can induce change in a system and how they are actually implemented in practice (Borras & Edler, 2015).

Instruments of the National Government

The most obvious instrument that a national government has at the onset of a disease outbreak is to **communicate** that the epidemic exists. However, there are multiple reasons why a government may fail to or intentionally decide not to declare an outbreak. Formally declaring an epidemic may carry political or social repercussions; negative trade and tourism impact; loss of faith in health institutions; and risks of social unrest (Rull, Kickbusch, Lauer, 2015). Still, the realization and publication of an outbreak is the crucial first step necessary to contain it. Important epidemiological controls, such as spread predictions, gathering medicine, and quarantine evaluations, cannot successfully begin without it.

The second instrument of the national government that we will note is its **healthcare infrastructure**, which is fundamental in delivering medical treatment regardless of the specific conflict or the presence of external actors. However, the onset of civil war is likely to have caused the destruction of health facilities, an exodus of medical personnel, and a deterioration of basic services (Wise & Barry, 2017). According to Sharara and Kanj, who evaluated the challenges posed by Syrian civil war on infectious outbreaks, there is an increasing trend of integrating the health care system into the battlefield. In Syria, both the government's military force and insurgency groups have attacked and taken over medical facilities as a strategy of warfare (Sharara & Kanj, 2014). Thus, although the interaction between the government and its health network is an important instrument, it will be limited in a conflict scenario.

Instruments of the World Health Organization

Recognizing the need for a supranational body to fight the spread of epidemics, countries have shown an increasing support for multilateral cooperation. Since the close of the SARS outbreak in 2003, the WHO has been attributed more power under the **International Health Regulations (IHR)** (Wise & Barry, 2017). Although the IHR enables the WHO to mandate that its member

states conduct disease surveillance and response, this instrument has not proven to be very effective within failed states (Wise & Barry, 2017). Along with the extreme logistical difficulty of data collection in a conflict zone, some governments may find the data too sensitive to publish.

Part III: Legitimacy in the process of governing change

For many systems, we ask: why does the public accept or reject the new socio-technical change being presented? In the case of violent conflict, it can be assumed that the objective of the population is to stay alive, no matter the source of the security. Still, there does need to be some level of trust between the people and the organizations offering that safety for it to be accepted. On an international level, that issue of trust turns into a problem of sovereignty between the external actors and their host nation. Both issues concerning the legitimacy of governance are explored in the following section.

The external actor versus national sovereignty

When trying to understand the characteristics of governance that affect a complex emergency, it can be seen that a major difficulty is the absence of a central authority who can legitimately "take charge." Because external humanitarian organizations operate under a principle of universality, they have to be careful to maintain that neutrality or risk losing the political legitimacy that allows them to act in the first place (Meier & Onzivu, 2014). Under the terms of the 2005 IHR, the WHO has expanded powers to impose measurements upon countries when they are believed to be a "Global Health Risk" (Meier & Onzivu, 2014). However, in extreme circumstances a country may refuse to accept WHO-imposed measurements or to even let healthcare works enter the country. In such instances, it is nearly impossible for the WHO to effectively take action without violating national sovereignty.

When do stakeholders trust governance structures?

The question of who holds legitimate authority does not only happen on a global level. Local populations may reject health care because of a deeply embedded lack of trust to authority (Barry & White, 2017; Blair et al 2016). This lack of legitimacy is not only problematic for stopping the disease, it can also reinforce local instability and violence. Given the strong correlation between war and the outbreak of infectious diseases, scholars often refer to this as a **negative feedback loop** (Heymann et al., 2015).

An example of a negatively self-reinforcing feedback loop can be seen during the Ebola crisis in Liberia in 2014. Prior to the outbreak, Liberia experienced a devastating civil war between 1989 and 2003 that killed at least 250,000 Liberians and forced nearly everyone in the country to evacuate at some point (Shilue & Fagen, 2014). In the article "Public Health and Public Trust" Blair et al. examined the correlation between an individual's faith in government and their risk of acquiring the Ebola infection. The study found that due to the lack of trust in the government, citizens were less likely to comply with the control measurements or to support policies by government and health workers (Blair et al., 2016). Because of this, the infection spread – along with an even greater loss of faith in the governance system. Some have argued that the WHO exacerbated this issue of community trust during the Ebola crisis, by ignoring some deeply embedded cultural values of the local community (Marshall, 2016). "There was, initially, little consideration [by the WHO] for local burial rituals, many of which conflicted directly with the WHO protocols. Impersonal and fearful health responses accentuated already live distrust for officials or outsiders" (2016, p. 11). Therefore, agents operating in a complex humanitarian emergency must be cognizant not to worsen the instability and distrust already prevalent in a situation.

3. Results

Complex humanitarian emergencies demand our attention because of the tremendous loss of life they cause. While these disasters can't be completely predicted or controlled, they do contain tragically preventable aspects. The absence of a powerful, legitimate government enables treatable diseases like cholera, polio, and measles to flourish during civil conflict. Furthermore, the social instability caused by disease outbreak creates a conflict-epidemic loop that is difficult to break. By studying the de facto governance of complex emergencies, several characteristics affecting the control of infectious disease are observed:

- **Actor interests are not aligned.** Because the parties have different interests and objectives, it can be the case that some of the most powerful actors do not want to address the problem. More and more frequently, combatants are targeting civilians and medical personnel to maximize societal damage. Additionally, combatants may set up blockades or other measures in order to deny people access to humanitarian relief.
- **Acting in a complex emergency is characterized by a lack of certainty**. The volatile conflict or post-conflict environment is full of serious unknowns, which complicate attempts to institute positive change. Furthermore, external agencies attempt to get access to citizens within the conflict "bubble," where they then must carry out operations in a dangerous security vacuum.
- **Access to reliable information is a major challenge**. Acquiring complete and reliable data about the epidemic is a major issue for experts facing an insecure environment, transient patient population, and limited resources. Without complete information, it is difficult for medical specialists to control or predict the spread of disease.
- **Those closest to the problem have more legitimacy but fewer resources**. While internal actors -from local doctors to the national government- may have the best understanding of how the population is affected by the emergency, the instruments of these leaders may be too weakened to induce change. External actors must also be careful to project neutrality or else risk being banned from the host country.
- **Actors strive to interrupt the conflict-disease cycle**. Disease outbreaks cause economic repercussions which increase social instability, which causes the civil strife that perpetuates the spread of illnesses. This link between conflict and disease is a negatively re-enforcing loop that actors strive to break (or at least not aggravate) when taking action.
- **Both internal and external actors struggle to build trust.** After government-sponsored violence, citizens may be highly

distrustful of any kind of governance – even medical help. External actors who do not speak the language or share the same cultural norms may find it difficult to connect with citizens, and must be sensitive to not exacerbate a crisis.

- **External actors are sensitive not to infringe on sovereignty.** Even in the most challenging circumstances, external agencies are balancing between saving lives and respecting political institutions.

These underlying characteristics affect the governance of change in a complex humanitarian emergency; however, it can be seen that they are applicable to super wicked problems in general. Many of the world's most complicated socio-technical systems are characterized by multilateral interests, negative feedback loops, and sovereignty issues, among others.

4. Conclusion and Discussion

This article explored the characteristics of governance that affect the control of an infectious disease outbreak in a conflict zone. The methodology included the application of the "Three Pillar" framework from Borras and Edler (2015) to complex humanitarian emergencies. As a result of the analysis, the following characteristics of governance were noted: actors interest are not aligned; acting in a complex emergency is characterized by a lack of certainty; access to reliable information is a major challenge; those closest to the problem have more legitimacy but fewer resources; actors strive to break the conflict-disease cycle; both internal and external actors struggle to build trust; and external actors are sensitive not to infringe on sovereignty.

Due to the broad nature of this challenge, the study was limited in its ability to capture all of the nuances involved in modern conflict. However, at a conceptual level these lessons are crucial to creating better policies for humanitarian response. As a result of the literature review, we found that a lack of trust between actors tended to prolong the emergency and also increased the likelihood of future emergencies to occur.

More research is needed into the strategies of global response organizations and working in zones where the formal governance structures have collapsed. Additionally, future studies should look more closely at the hindrances faced by each actor during complex emergencies, as a precursor to understanding how those bottlenecks could be removed.

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