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Title of paper: Lessons learnt from the 2014 West Africa Ebola Viral Disease (EVD) Outbreak: Economic, Political and Social Impacts of Disease Outbreaks.

Abstract

In many disease outbreaks, their effects can invariably be measured in both direct and indirect terms; directly by observable, measurable outcomes and indirectly by looking for knock-on effects post the disease outbreak. Some of these angles and degrees of measure could matter more and provide a different yet more objective measure of a true disease outbreak's impact. Such measures include the economic, social and political implications following a disease outbreak. This research looks to study and document the economic, social and political implications of the 2014 West African EVD outbreak that mainly ravaged Guinea, Liberia and Sierra Leone. Whilst the outbreak may have been theoretically localized around the three countries, other neighboring and far flung but somewhat affiliated nations also had their share of the outbreak's implications. This research also looks to study and identify knock-on effects of the outbreak in the other countries (outside the three at the outbreak's epicenter). The research looks to inform and boost the focus on early and targeted mitigation efforts if only to safeguard the interests of regional blocks and other nations that may be victims of negative downturns as a result of such disease outbreaks. The research hopes to inform and spur intraregional and international discussions and engagements on how to best deal with such disease outbreak in a measurable and sustainable manner, with an aim to possibly safeguard their socio-economic and political interests.

Common terms: Case Fatality Ratio (CFR), Centre for Disease Control and Prevention (CDC), Disease Surveillance Response Unit (DSRU), Ebola Virus Disease (EVD), Viral Hemorrhagic Fever (VHF), World Health Organization (WHO).

Introduction

According to WHO (2014), the 2014 West African Ebola Virus Disease (EVD) outbreak provided one of the most challenging and grueling disease epidemic operations known in the history of combating Viral Hemorrhagic Fevers (VHFs). It brought about far-reaching economic, social and political consequences that are still being felt by some nations as of this writing and will take some time before the full impact is fully mitigated. WHO's assessments show that Liberia bore the brunt of the outbreak, having reported the most cases (more than 3,000) and deaths (nearly 2,000), as well as the highest case-fatality rate (70.8%). Some of the practices and social norms shaping the trajectory of the Liberian outbreak include funeral rituals, disparate gender roles, and the stigma faced by those who contract Ebola (Ravi et al, 2014).

When a disease outbreak occurs, the impact should be measured not just from the direct deaths or casualties' point of view, but researchers should seek to have full understanding of how the outbreak affects a given community's economic, political and social livelihoods. With this understanding, one does not need to do any convincing to the government or business establishment on the importance of their roles in ensuring disease outbreaks are well-managed and that control measures are in place to ensure cases that are preventable are not allowed to escalate to full-blown outbreaks.

Wilkinson et al (2017) observe that Sierra Leone and Guinea share broadly similar cultural worlds, straddling the societies of the Upper Guinea Coast with Islamic West Africa. There was a notable difference in their reactions to the Ebola epidemic. Despite more than 25 documented outbreaks of Ebola since 1976, there seems to be a limitation in understanding of the disease, in particular its social, political, ecological, and economic forces that promote (or limit) its spread (Richardson et al, 2016). As the epidemic spread in Guinea, acts of violent or everyday resistance to outbreak control measures repeatedly followed, undermining public health attempts to contain the crisis. In particular the structures of state authority through which the national epidemic response were organized integrated very differently with trusted institutions in each country. Predicting and addressing social responses to epidemic control measures should assess such political-trust configurations when planning interventions (Wilkinson et al, 2017).

Literature Review

The impact of disease outbreaks is of critical importance to the continuous functioning of any nation. This greatly informs the monitoring and disease surveillance efforts of nations; carefully managing disease outbreaks to minimize their impact on business and on the economy at large. The measure and observation of disease patterns can be achieved through disease surveillance practice. The

term “surveillance”, has French roots, “surveiller” and it means “to watch over”; it is defined as the “close and continuous observation of one or more persons for the purpose of direction, supervision, or control” (Hellström et al, 2008). In the early years of modern public health (1940 – 1960), the term surveillance was applied to the collection, analysis, interpretation, and dissemination of (health outcome-specific) data to those who needed to know. With time, public health surveillance has been redefined as the ongoing systematic collection, analysis, and interpretation of outcome-specific data for use in the planning, implementation, and evaluation of public health practice (Thacker et al, 1988).

According to the WHO Ebola Response Team (2014), the Ebola virus disease outbreak in West Africa was unprecedented in both its scale and impact. Out of this human calamity has come renewed attention to global health security—its definition, meaning, and the practical implications for programmes and policy. Many questions still abound; for example, how does a government begin to strengthen its core public health capacities, as demanded by the International Health Regulations? What counts as a global health security concern? In the context of the governance of global health, including WHO reform, it will be important to distil lessons learned from the Ebola outbreak’s reach and impact.

The affected countries, Sierra Leone, Guinea, Liberia, and Nigeria struggled to contain and mitigate the outbreak. The resulting rise in confirmed and suspected cases (2,615 as of 20 August 2014), was considered to increase the risk of international dissemination, especially because the epidemic was then affecting cities with major international commercial airports (Gomes et al, 2014). With this outbreak, it was expected that whatever the transmitting cause and spread of the virus, it did affect the economic, political and social activities with an immense strain on the health sector (Ayeni et al, 2016). As of September 14, 2014, a total of 4,507 confirmed and probable cases of Ebola virus disease (EVD), as well as 2,296 deaths from the virus, had been reported from five countries in West Africa — Guinea, Liberia, Nigeria, Senegal, and Sierra Leone (WHO Ebola Response Team, 2014). This translated to a case fatality ratio (CFR) of about 51%; i.e. over half the people who got infected died of the disease. It is pitiful to contemplate the great loss of lives of people in a community who were making their contributions be it economic, social or political.

Poletto et al (2014) observe that the quick spread of an Ebola outbreak in West Africa quickly led a number of countries and airline companies to issue travel bans to the affected areas; a measure taken to reduce the exposure and possible transportation of the virus across the different countries through which flights passed through. For instance, the World Health Organization (WHO) declared Kenya a high risk destination in early 2015, mainly attributed to the 76 regular Kenya Airways flights that

used to ply the Nairobi-West African routes. Generally, the Ebola pandemic in West Africa had a disastrous effect mainly on tourism across the whole African continent (Partoip, E, 2016).

The rapid, unprecedented spread of Ebola in 2014 quickly outran weak and underprepared health systems across various nations it reached. This necessitated huge government expenditures, with the disease also halting a lot of economic activities, driving systemic shocks in the already fragile economies of these countries and causing spillover effects to other countries (Sy et al, 2014).

Research Framework

From economic, political and social perspectives, the 2014 Ebola Disease outbreak was the most impactful in the history of disease outbreaks. The main questions to be answered here include: what were the economic, political and social impacts and reaches of the EVD outbreak? How prepared were the different affected nations? What lessons can be drawn from that outbreak? How can these nations and others that got affected directly and indirectly be better equipped for any repeat of such outbreaks in the future?

The research approach employed here is a blend of analysis of data from various affected business and commercial chambers in the respective countries as well as reviews of other research publications and journal articles that touched on the general impact of that particular outbreak. Part of the measures will involve the determination of parameters such as the case fatality ratio (CFR), which is generally a measure of the ratio of number of patients who succumb to a given disease out of the total infected population; a lower CFR is desired.

Results or Findings

The 2014 Ebola outbreak involved three countries with widespread and intense transmission in the primary West African region (Guinea, Liberia and Sierra Leone) and four others where initial or localized case(s) had been reported (Nigeria, Senegal, Spain and the United States), reaching a total of 8,997 cases and 4,493 deaths in the official report of 15 October 2014 (Poletto et al, 2014). Scaling up the international response appeared necessary for provision of financial support, supply of technical resources and expertise, and delivery of essential services to the affected areas. Air travel data is a critical source of information that has been recently analyzed to characterize the degree of connectivity of the affected area to the rest of the world.

The researcher focuses mainly on measurable impact from three perspectives i.e. economic – where economic activities were minimized or curtailed as a result of the EVD outbreak, social – where the social activities of a community were grossly affected by the EVD outbreak and lastly, political –

cases where the EVD outbreak had an immediate and direct impact on the political functions and activities of a nation or region. Some of the cases had both economic and social effects.

Flight data

Table 1 - Flight Data on Actions by Different Countries/National Carriers (Source: Poletto et al (2014)).

Travel-related measure	Travel-related measure Authorities/Companies	Starting date of Interventio ¹	Target area	Additional details ^{2, 3}
Flight suppression	Three European airlines	From 6 Aug 2014 to 28 Aug 2014	Liberia Sierra Leone	-
	Two Asian Airlines	From 6 Aug 2014 to 14 Aug 2014	Guinea Kenya	-
	Six African Airlines	From 6 Aug 2014 to 26 Aug 2014	Guinea Liberia Nigeria Sierra Leone	-
Travel ban and/or border closure	Ghana	1 Aug 2014	Liberia Nigeria Sierra Leone	Ban of all flights from the affected countries
	Zambia	8 Aug 2014	Liberia Nigeria Sierra Leone	Ban on entry for citizens of the target countries
	Mauritania	11 Aug 2014	Liberia Nigeria Sierra Leone	Ban on entry for citizens of the target countries
	Chad	11 Aug 2014	Liberia Sierra Leone	Ban of all flights
	Cote D'Ivoire	13 Aug 2014	Nigeria	Ban of all flights, closure of land borders
	Nigeria	13 Aug 2014	Guinea Liberia Sierra Leone	Ban of all flights from the affected countries
	Botswana	14 Aug 2014	Guinea Liberia Sierra Leone	Banned travelers from affected countries
	Equatorial Guinea	15 Aug 2014	Guinea Liberia Sierra Leone	Suspended the issuance of visas
	Gambia	15 Aug 2014	Guinea Liberia Sierra Leone	Ban of all flights
	Kenya	16 Aug 2014	Guinea Liberia Sierra Leone	Ban of all flights
	Cape Verde Islands	19 Aug 2014	Guinea Liberia Sierra Leone	Border closure

Travel-related measure	Travel-related measure Authorities/Companies	Starting date of Interventio ¹	Target area	Additional details ² , ³
	South Africa	21 Aug 2014	Guinea Liberia Sierra Leone	Ban on entry for citizens of target countries
	Cameroon	21 Aug 2014	Guinea Liberia Sierra Leone	Border closure
	Senegal	21 Aug 2014	Guinea Liberia Sierra Leone	Closure of land borders
	Rwanda	24 Aug 2014	Guinea Liberia Sierra Leone	Border closure
	Gabon	26 Aug 2014	Guinea Liberia Sierra Leone	Border closure
	Namibia	26 Aug 2014	Guinea Liberia Sierra Leone	Border closure
	Guinea Bissau	Before 26 Aug 2014	Guinea Liberia Sierra Leone	Ban of all flights, closure of land borders
	Togo	Before 26 Aug 2014	Guinea Liberia Sierra Leone	Ban of all flights

Legend

¹ Depending on the information available, this was either the date of intervention or the date of the bulletin/news.

² Closure of land borders was for all travelers irrespective of citizenship.

³ Border closure was generally for citizens of the target countries and travelers coming from the affected area, with the exception of nationals of the destination country.

The tabulated data was obtained from publicly available sources extracted from searching [“economic impact of the 2014 Ebola Virus Disease] and on Google Scholar on 19th July 2018. Additional searches of news published on the Internet were performed to confirm and corroborate or complement the initial data.

Many people have asked why the outbreak of Ebola virus disease in West Africa was so large, so severe, and so difficult to contain. These questions can be answered with a single word: poverty (Chan, M., 2014). Unfortunately, Ebola virus outbreaks typically constitute yet another health and economic burden to Africa's most disadvantaged populations (Ayeni et al, 2016). Poverty drives people to expand their range of activities to stay alive, causing them to venture and plunge deeper into forests to expand the geographic as well as species range of hunted game and to find wood to make charcoal and deeper

into mines to extract minerals, enhancing their risk of exposure to Ebola virus and other zoonotic pathogens in these remote corners (Bausch et al, 2014).

Discussion or Analysis

Although the travel restrictions caused the postponement of the spread of EVD to other continents by at most a few weeks, they imposed heavy logistical constraints on the management of the epidemic in the countries severely hit by the disease and ill-equipped to cope with its alarming rapid spread (WHO, 2014). Governments lost revenues.

Community health facilities served the local population as a means of support and mitigating measure incase people are taken ill. Sadly, these facilities are generally ill-equipped and poorly resourced to enable them to comprehensively deal with any infectious disease outbreak cases. Should these people pick up such disease strains in their hassle and bustle of life, they will probably report to these community health facilities. Should the facility health workers misdiagnose the ailments (as is common) and unfortunately release the people back into the community, they (the health workers) will already have been exposed to the disease strain and additionally cause the exposure of more people to the disease to spread through their inadvertent releasing of patients back to the community. This is how outbreaks such as the 2014 EVD spread fast and furiously.

From table 1, the cancellation of flights and closure of different countries' geographical boundaries, whilst it was meant to contain the spread of the disease, it constrained different communities economical and socially. International conferences and meetings were cancelled and/or relocated from the EVD epicenter. Governments and people in the cancelled venues lost anticipated revenues in terms of tourist visa collections, airport taxes for landing flights, airport-to-hotel/hotel-to-airport transfers, hotel stays and tips, sales of mementos and local memorabilia among other sources of foreign currency earnings.

Conclusion

This study is indicative of massive losses incurred by airlines and other related/partner businesses such as travel agencies, hotels etc that heavily depend on the airline industry. The economic impact on the lives of those in the community cannot be gainsaid.

The impact of this outbreak both within the primary three countries and beyond had very far-reaching effects. With airlines canceling flights, there were huge losses and loss of income incurred by both the airlines and other affiliated businesses. Hotels and conference venues lost earnings and revenue as a result of postponed or totally cancelled travel activities. This has a knock-on impact on local businesses such as taxis and tour guides who depend on tourism as the main source of income. As

a result of deaths from this outbreak, business lost able-bodied, skilled and experienced personnel who got caught up and lost their lives to the EVD. This in turn had a direct impact as a result of loss of skilled and knowledgeable personnel to run businesses.

In a nutshell, governments, through their disease surveillance and response units should take to engaging businesses and the entire community in full sensitization on the impact of such disease outbreaks not only to their loved ones (in terms of loss of lives) but also from the point of view of how such can impact their business operations.

In addition to the sensitization, preventive and proactive measures should be put in place and people trained on how to assist contain such outbreaks should they occur again in the future. Experience has shown that reactive tendencies to such critical occurrences as disease outbreaks are never and shall never be sufficient. Drills and mockup outbreak activities should probably be undertaken as part of the sensitization efforts. This could probably trigger some good level of awareness and responsiveness in the event an outbreak was to occur.

Furthermore, governments should also sensitize their security apparatus on the impacts of such disease outbreaks. There have been cases in which disease outbreaks have been purposely engineered with bioterrorist intentions as the main driving force. The security apparatus working together with personnel at the ports of entry and exit working can play a very critical role in identifying such cases and snuffing them out before their impact can be felt.

Finally, governments should also look to work together in partnership with other international bodies such as the CDC and WHO and with other nation's response teams and personnel to map out co-operation strategies on how to combat disease outbreak cases that threaten to go regional, beyond borders. If it had not been for co-operation and working partnerships between the health agencies and other governments' personnel, the 2014 EVD outbreak could have taken longer to contain, not to mention how many more victims it would have claimed and what huge economic, social and political toll it would have taken on many neighboring or affiliated nations if it had been allowed to reign supreme.

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