

# Ebola Lessons for a Global Village: I am my brothers' (and sisters') keeper

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The ongoing Ebola outbreak is estimated to have resulted in over 8,300 deaths, and is the largest such outbreak in recorded history. Although largely confined, this time, to West Africa the ramifications of the disease have been global. Widespread transmission of the disease was evident in Guinea, Liberia, Sierra Leone, with additional cases also noted in Mali, Nigeria, Senegal, Spain, the UK and the USA.<sup>1</sup>

The painful reality is of course that deaths in Africa are routinely ignored and barely rate as 'news' in the 'West'. The recent Ebola outbreak, however, is different. In part this is a result of the very high case mortality rate associated with the disease. Although the rate in the current outbreak appears variable across countries, the WHO suggest that case mortality rates for Ebola typically vary between 25% and 90%.<sup>2</sup>

However, much of the international attention was focused not so much on the thousands dying in Africa, but the handful infected in Europe and the USA. It was perhaps the plight of these few 'local' individuals that delivered a key message, albeit fleetingly, into public consciousness in the 'West'. The outbreak gave an easy to interpret

insight into just how truly vulnerable and interconnected our global village really is. The importance of this message was further amplified when the outbreak exposed deficiencies in both the most expensive health system in the world, and international response efforts. The ensuing 'blame game' involved apologies from the Dallas Hospital involved, the CDC and even the head of the WHO.

The significance of the outbreak is evident in that it evoked a UN Security Council Resolution which stated that "the unprecedented extent of the Ebola outbreak in Africa constitutes a threat to international peace and security".<sup>3</sup> As a result the outbreak evoked the formation of the first ever UN emergency health mission: UNMEER.<sup>4</sup>

Although UNMEER has a very specific mandate it is cause for optimism.<sup>4</sup> At one level it underscores the reality that health is a global issue, and that the threats faced by one country are, in fact, threats faced by all. Although the focus of UNMEER is obviously Ebola in West Africa, it would be naïve not to view the current outbreak in the context of poorly developed health infrastructures and poverty in the shadow of civil wars that previously engulfed the region.<sup>5</sup>

The global linkages that Ebola forced to center stage need to remain part of global health services and health systems thinking. It is crucial that this focus and acknowledgement remains. Returning to our nationalistic introverted state-based silo mentality is not an option. Ebola, needless to say, is not gone, even if we see no new cases for a month, a year, or a decade. It remains 'out there', an ongoing threat. Even if Ebola were to disappear we can look forward to the re-emergence of SARS, bird flu, swine flu or something far worse eventually. It is only a matter of time.

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**Received:** December 14, 2018.

**Accepted:** April 21, 2020.

**Conflict of interest:** none.

To compound the threat of future outbreaks of infectious diseases are seven inter-related issues that must be acknowledged. Firstly, it is vital to acknowledge the impact of global poverty on health and health services infrastructure.<sup>6</sup> Poor underlying health status, a lack of basic health infrastructure (e.g. fresh water, sewage and waste disposal), as well as minimal, absent or financially prohibitive health services, present easy opportunities for widespread disease transmission.<sup>7-8</sup> In such environments effective disease surveillance may be almost impossible.

The second key factor is that of increasing population. The global human population was estimated to have reached 7 billion somewhere between 2011 and 2012 and this increase looks set to continue.<sup>9-11</sup> Increased population has implications for poverty and often results in increased environmental degradation, as well as further incursions and development into new habitats.<sup>12</sup> This has ramifications for health, particularly in relation to zoonosis.<sup>13</sup> In addition as populations move above the poverty line increased demand for meat often results in industrialized urban farming in close proximity to cities providing increased opportunity for zoonotic transmission.

The third compounding issue is urbanization. An ever-increasing proportion of the world population is urban based with a dramatically rising number living in what are termed megacities (i.e. having a population in excess of ten million). The United Nations reported that 2008 was the first year in world history that more than half of the global population were living in urban settings.<sup>14</sup> Just six years later, in 2014, that figure had already jumped to 54%.<sup>14</sup> The largest of these include, 'Western' cities like Tokyo and New York, where a certain level of public health infrastructure funding exists. However this list also includes more challenging environments such as Delhi, Mumbai, Sao Paulo, Jakarta, and Mexico City. There are currently 33 megacities, with more anticipated in the near future. Such urban concentrations, particularly when combined with intense and focused poverty, may prove particularly effective habitats for disease transmission. In addition they may prove highly vulnerable to the impact of disruptions in

basic services and supplies that will almost inevitably accompany any significant outbreak.

The fourth compounding issue relates to global trade. We live in an era of unprecedented global trade.<sup>15</sup> Supply networks for both goods and services routinely cross not just countries, but continents. This global supply chain is important for three reasons. Firstly, because in terms of disease diffusion, produce and animals are now routinely transported in vast quantities around the globe, infinitely increasing the potential spread of pathogens.<sup>16-17</sup> Secondly supply chains have become so global and convoluted that it is actually very difficult to determine, monitor and police the origins of all elements of any given product. Finally, such global networks are precarious and particularly vulnerable to disruption.

The fifth issue relates to travel and in particular to international air travel. This looks set to continue to rise inexorably as a result of increasing business and tourism related travel. Historical accounts of the spread of infectious diseases clearly demonstrate the often slow and seemingly inevitable progress of diseases with countries clearly having time to assess the impact the growing threat.<sup>18</sup> Air travel may reduce the time line in such diffusion significantly.<sup>19</sup> The sheer scale of the volume of modern air travel is notable. For example in 2012 almost 3 billion people flew on 37.5 million separate flights.<sup>20</sup> In terms of infectious diseases 'jumping' around the globe, the potential threat from international air travel looks set to increase significantly. Growing affluence in industrializing countries will further foster both increased business and tourism travel. It is not only the overall volume of international air travel which is an issue, but the speed of travel and number of passengers per flight. In terms of the diffusion time frame there is currently speculation over the proposed reintroduction of a super sonic passenger aircraft (not really seen since the decommissioning of the Anglo-French produced Concorde in 2003).<sup>21</sup> In addition shrinking seat space combined with larger aircraft (such as the new Airbus) would appear to make the chance of contagion more likely, while increasing the difficulty of prompt contact tracing and, if necessary, containment.

The sixth issue relates to international migration. The US Census Bureau currently estimates that the rate of net international migration is one person every 33 seconds.<sup>11</sup> It is not only goods and labor that are subject to global flows, but also labor. Two issues are important here. Not only is this flow yet one more constant avenue for potential disease diffusion,<sup>22</sup> but more importantly, much of this population movement relates to situations of escaping from or moving to below or near poverty line situations. Although some of this international flow is for relatively well-educated personnel acquiring high-paying jobs, more of it is simply attempts to escape poverty and conflict. Unfortunately many migrants, rather than finding salvation, find themselves at best living in sub-standard conditions, being paid below or near poverty line wages and exploited because of their precarious visa or illegal status.

The final issue compounding the threat from infectious diseases relates to climatic changes in our anthropocene era. Current climate changes have fostered environments permitting growth of some disease vectors with significant potential implications for new, emerging, and reemerging zoonoses.<sup>23-26</sup>

Ebola has succeeded in focusing national and international attention on global health issues and the interconnected nature of our world. This attention and broad focus must be sustained. It is alarming that even while the current outbreak continues the WHO is already warning against donor fatigue in its Ebola operations. A global public health approach requires a comprehensive analysis of the root causes of the issues and system vulnerabilities. This upstream orientation must focus attention on the causes and impact of poverty and conflict, as well as inadequate, underfunded, inaccessible or nonexistent health services. Current proposals for Ebola monitoring although important are in effect ‘papering over the cracks’.

A global public health orientation is required. This effort benefits all. If necessary perhaps appeals may need to focus on self-interest to achieve this aim, if appeals to higher ideals remain unanswered. Many of the confounding issues outlined above, such as increased international

travel and trade are, in part at least, a result of the successful orchestrations of neoliberal advocates of free trade. These same groups also routinely lead calls for a reduced role of government, which they often refer to as red tape, bureaucracy and state interference, and target government welfare and health spending. Their mantra is reduced state health services, state intervention, and lower taxes. However, global trade comes at a price. Diseases do not respect borders and current patterns of travel and trade make attempts at impermeable borders farcical at best. A strong global health infrastructure is required, backed by peace and a focus on combating poverty.

Most commentators agree that the US currently has a disease management system, rather than a health care system. However, Ebola revealed the inadequacy of the system in relation to even that limited remit. While the CDC is currently congratulating itself on developments across 12 states that have delivered 60 potential beds for Ebola victims,<sup>27</sup> the numbers of Ebola infected individuals in Africa provide a sobering reminder of the extent of the current and potential threat. The lesson to be learned is that in our global village we are all our brothers’ and sisters’ keeper.

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