Editorial

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Though numerous Ebola outbreaks have occurred during the past 40 years, the current epidemic of Ebola Virus Disease (EVD) has killed far more people than all previous outbreaks combined. As with previous outbreaks, it is believed to have been sparked by zoonotic transmission of the virus from animal to human—followed by human-to-human transmission—in early 2014. While previous outbreaks occurred in Central Africa, the current epidemic has primarily affected West African countries—Guinea, Sierra Leone, and Liberia in particular—with no prior experience with the disease (and thus its control); and it has been unprecedented in affecting major population centres, including capital cities, whereas previous outbreaks were limited to small rural villages.

To date (at the end of January 2015), there have been approximately 22,000 confirmed cases and 9000 deaths, with an average case fatality rate of roughly 60 % (of hospitalized cases) in high-transmission countries. While Ebola is spread by contact with bodily fluids, human factors underlying the current epidemic include traditional African burial practices that involve direct touching and washing of bodies, cultural/religious beliefs at odds with biomedical science, and lack of trust in local healthcare systems and/or international response efforts. Given that the most heavily affected countries are among the world's poorest, the epidemic got out of control partly due to inadequate local resources needed for public health response measures such as isolation, quarantine, and contact tracing—and slow international response. Despite 4 decades of experience with Ebola, finally, relatively little research and development of Ebola therapeutics and/or vaccines had previously taken place—so there is no cure or vaccine against Ebola proven to be safe and effective. It has also been suggested that virus mutation may have increased

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transmissibility and/or decreased virulence of the virus—either of which could partly explain the scale of the epidemic.¹

Since the World Health Organization declared EVD a Public Health Emergency of International Concern in August 2014, there has been a substantial influx of aid from the international community, and travel (exit) screening has been recommended (by WHO) and implemented in highly affected countries. Meanwhile, there have been several cases of EVD in wealthy developed nations—such as Spain, the US, and UK—primarily involving repatriated health care workers infected in Africa. While numerous airlines and/or countries have imposed severe limits on travel from high-transmission countries many have voiced concern that this may hamper control efforts (by limiting transport of response personnel and/or supplies to/from the high transmission region) and exacerbate the already high economic burden of EVD in West Africa.

Most ethical debate surrounding the current EVD epidemic has thus far focused on the clinical use of unregistered experimental therapeutics not previously tested on humans; relevant research on therapeutics and vaccines in this emergency context (in particular the question of what would be appropriate trial design—e.g., would placebo controlled trials be ethically permissible—and what patients, populations, and/or interventions should be prioritized for study). Though less discussed, the epidemic also raises ethical questions that have arisen in the context of other infectious diseases: healthcare workers' duty to treat patients when this poses risks to healthcare workers themselves, the ethics of social distancing measures (such as isolation, quarantine, and travel restrictions), individual duties to avoid infection of others, and the obligation of wealthy countries to do more to improve health (care) in poor countries.

The issue of collective responsibility looms large with regard to the latter issue in particular. The problem of market failure in the context of pharmaceutical research is salient in the context of “neglected diseases”. It is a well-known phenomenon that proportionally little pharmaceutical research focuses on diseases responsible for the majority of the global burden of disease, and vice versa. Private pharmaceutical companies focus their efforts on research and development of products that are expected to be most profitable, rather than those that are most important from a global health and/or ethical perspective. We currently have no proven treatments (aside from “supportive care”) for, or vaccines against, Ebola precisely because relatively little effort was devoted to their development.

It is understandable that private companies (previously) had little financial interest in developing pharmaceuticals interventions against Ebola given the small scale of past outbreaks, and limitation of their occurrence to impoverished African countries (with exceedingly small health care budgets)—and it is unsurprising that private companies usually do what is ultimately in their own private interests. The current crisis thus reflects the error of reliance of private institutions to provide solutions to what are ultimately public problems requiring public solutions. Whether or not private companies had interests in developing treatments and vaccines against

¹ Reduced virulence can promote spread of a disease, for example, when those who are infected survive—and are thus able to infect others—for a longer period of time.

Ebola, it would have been in the public interest for them to be developed in advance of the current crisis—which is causing disruption to international trade and travel in addition to morbidity/mortality and further impoverishment of what were already the world's worst-off countries.