Part 1: The Governance of Epidemic-prone Infectious Disease Threats – An Overarching Review

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Introduction

The emergence and spread of disease has long been a concern of the international community. In today's highly globalised world, and in the wake of several high-profile disease epidemics such as SARS, Zika, Ebola and now COVID-19, such concern continues to animate global health discourse and debate. 'Governance', as applied to emerging epidemic-prone infectious diseases, is almost always used in reference to formal relations and arrangements between global health actors, including: evolving, shifting and/or emerging mechanisms or structures (International Health Regulations, World Health Organization, GOARN, NGOs, Private Public Partnerships); normative orientations and their implications ('sentinel' vs prevention approaches); and power (state sovereignty; capacity and authority of WHO; 'enforceability' of IHRs etc.). Less frequently is 'governance' invoked by scholars considering activity at the community level in the context of epidemic preparedness and response, and thus a considerable gap exists in the literature bridging these discussions – formal arrangements on the one hand, and community level on the other hand. This review attempts to map some of the major debates and discourse around the governance of epidemics which have focused on the global level, as well as to highlight work and analysis with more 'bottom-up' perspectives which, while not necessarily articulated through a language of 'governance', have implications for how governance is conceptualised and operationalised.

The evolution of 'germ governance'

With rising anxiety about HIV/AIDS, TB and malaria, and in the context of globalisation, concern about the international spread of infectious disease, and the need for 'germ governance' began to pick up steam in the 1990s and early 21st century (Fidler, 2004). Emerging narratives about this emphasised that 'state sovereignty is alien to the microbial world' (Aginam, 2004b, p. 74), and thus new 'post-Westphalian' governance arrangements were necessary to combat pathogen spread. While essentially articulating a narrative of mutual vulnerability (that critical voices would later come to critique as prioritising wealthy populations), some of this literature itself critiqued older approaches and characterised 19th and 20th century governance as having been built on an isolationist 'civilized-uncivilized disease construct' oriented towards protecting European countries (Aginam, 2004a, p. 299). In the event of an outbreak of infectious disease, mechanisms had primarily been state-on-state imposed health and immigration policies, and trade, travel and economic embargoes, with powerful sovereign states, supported by European-led international treaties and sanitary conventions, largely calling the shots and with harsher restrictions directed towards poorer countries (Aginam, 2004a). Fidler (2004) called this focus on inter-state germ control 'horizontal' governance, noting the International Sanitary Regulations of 1951 – which would become the World Health Organization's International Health Regulations (IHRs) – as exemplary of this. Their objectives were to 'ensure the maximum security against the international spread of disease' – these regulations applied only to cholera, plague and yellow fever – 'with minimum interference with world trade and travel' (Fidler, 2004, p. 799). Over the latter half of the 20th century, the IHRs and the horizontal governance they represented waned in importance due to the emergence of international trade law, and a 'vertical turn' towards disease (Fidler, 2004).

The 'vertical turn' and the decentralisation of global health

In the wake of World War II, increasing momentum of rights narratives would eventually lead to the emergence of more 'vertical' orientations towards disease, which challenged the dominance of traditional state-centric pathogen governance and its emphasis on transboundary movement of disease. As Fidler (2004) continues to explain, this new 'vertical' orientation highlighted failing public health systems, and focused on disease eradication and access to primary care and essential medicines within countries. It became increasingly

visible and influential in the latter half of the 20th century as illustrated, for instance, by the 1978 Alma Ata declaration on 'Health for All' (WHO, 1978). Although this movement, strongly linked to rights and equity, initially envisioned the 'bottom-up' building up of health systems and universal access to quality primary care, what emerged around the turn of the 21st century was rather a landscape of disease-specific programming (targeting, for instance, HIV/AIDs, malaria and TB). This, while retaining a novel in-country focus *vis a vis* traditional horizontal disease governance, also led to a proliferation of new non-state actors on the global health scene. At the turn of the century, a host of NGOs, research institutions, corporations, philanthropists and public-private partnerships (PPPs) such as the Global Fund to Fight AIDS, Tuberculosis and Malaria became important in a new, more networked global health governance landscape, focused closely on specific diseases and health issues (Dry, 2010).

Around the same time, the emergence of non-state actors in the context of epidemic control came to represent the emerging 'post-Westphalian' global governance seen to be necessary to manage the spread of communicable disease in a rapidly globalising world. This is exemplified by the Global Outbreak Alert and Response Network (GOARN) established in 2000. The GOARN is made up of a collection of technical and research institutions and other organisations, coordinated by the WHO, to pool relevant technical and human resources for rapid identification of outbreaks, information sharing, and response (Mackenzie et al., 2014). The emergence of a growing number of such non-state actors in global health has generally been seen as a positive development by international law scholars, as a variety of strengths, capacities and perspectives of many different actors, facilitated by the connective power of emerging communications technologies, could now be harnessed, integrated and coordinated in order to detect and respond to outbreaks. Others have had more sceptical reactions to this development. Dry (2010), for instance, has asked to what extent this decentralising landscape of global health governance actually represented a scaling up and entrenchment of a type of 'passive groupthink' and coherence around a narrow set of narratives, priorities and measures. This critique persists. Michael and Madon (2017), commenting on governance for neglected tropical diseases in 2017, referred to the now wide array of multi-level actors as a 'like-minded' 'epistemic community' that has cohered around particular knowledges and narratives, and associated managerial paradigms for action. They argue – as have many critical voices – for governance that is more open to interdisciplinary perspectives, that is adaptive, reflexive, embraces uncertainty, and can respond to complexity and balance flexibility with stability focused structures.

SARS: the coming-of-age of global epidemic governance?

Several authors have argued that the SARS outbreak of 2003 led to, and resulted in, the codification of some of the significant shifts in 'germ governance' outlined above. Because the IHR did not apply to this disease at the time, China was not obligated to report it, and initially they did not. Some have interpreted this reticence to report as a function of state anxiety over the prospect of economic isolation, borne of historical precedent (Aginam, 2004a). Nevertheless, Fidler (2004) argues the outbreak put 'the final nail in the coffin of relying on traditional horizontal strategies for germ governance' (p. 91), as the WHO exercised new, unprecedented power, and shored up its role as central to global epidemic governance in three key ways: 1) its use of non-official sources to track the outbreak rendered Chinese state sovereignty over information about it irrelevant (and, as many have argued, has since cut off the ability of any state to hide or deny outbreaks); 2) its mobilisation of a number of non-state global actors to track this information, produce scientific research on SARS and to develop clinical guidelines; 3) its independent issuance of travel advisories and alerts directly to travellers, unmediated through member states. Such action was not in the WHO's constitution or mandates at the time, but the apparent success of this strategy and lack of challenge from member states to its actions would see these powers formally codified in an updated version of the IHRs which went into effect in 2007 (see surveillance below).

As clear-cut and linear as this story seems, however, Bloom (2010) has highlighted the existence of multiple narratives behind the successful containment of SARS. He notes that the above story of the WHO, for instance, is told in a way that positions it (and its mobilisation of global partners) and its acting in the interest of the public good, against the short-term political interests of the Chinese government. Parallel to this, however, has operated another narrative within the Chinese state wherein public health officials and researchers, long seeking a more structured, resourced system, lobbied the Chinese government to effective action after a short delay. Both narratives, Bloom notes, coalesce around the success of a central organisation – the WHO on one hand, and the Chinese government on the other – and ultimately legitimate top-down approaches and control, even if the narrative surrounding the WHO illustrates a more networked approach, spread across a number of new actors seeming to act in concert. Either way, the epidemic and its successful containment is widely considered to have legitimated the emergent global architecture, the development of which was also buoyed by narratives around securitisation and, later, preparedness.

Global Health Security

In the 1990s, and especially after 9/11, fears of 'bioterrorism' in wealthy nations, especially the US, spurred calls for more robust global disease surveillance, and saw the wrapping together of national security with public health. The 'securitisation' lens of global health governance is prominent especially among international relations scholars (Wernli et al., 2017), and is conventionally associated with a militaristic imperative to protect national borders (Heymann et al., 2015; Ng & Ruger, 2011), although others have emphasised the literal involvement of militaries or military logics in disease response itself (Lakoff, 2008; Larkan et al., 2015). Davies (2008) argues that in pursuing global legitimacy and authority, the WHO leveraged this discourse to assert itself as the primary actor upon which states - and particularly 'western' states - could rely to protect their populations. The creation of the GOARN, Davies argues, was positioned as the key mechanism through which global surveillance would occur, and its function, in prioritising 'containment' and 'global health security', would privilege wealthy populations. This view argues that the security framing is reinforced by the IHRs, which bind governments to take actions to protect collective health security through investing in rapid detection and response to halt transmission when infectious threats emerge and threaten international spread. In doing so, the IHRs do not enshrine the importance of 'individual security', argued by Heymann as the personal access to quality health services and medical technologies (Heymann et al., 2015). Indonesia, in refusing to share samples of an avian influenza strain in 2007, challenged this orientation towards 'global health security' by insisting that vaccines developed in and for wealthy countries be shared with poor countries, who are not only more vulnerable to the diseases for which such vaccines are developed, but also have less ability to access these vaccines (Elbe, 2010). A nod towards 'people centred' health security, over and above borders, international relations and markets was revitalised in the wake of the West African Ebola crisis, with Chen and Takemi returning to the conclusions of the much earlier UN Commission on Human Security chaired by Amartya Sen. This Commission emphasised the interacting and multiple dimensions of 'security', and how insecurities such as poverty, deprivation and conflict can heighten both individual and collective vulnerability to health crises (Heymann et al., 2015).

'Preparedness' is seen as essential for global health security. It reflects a shift from an 'actuarial' approach to public health, which relies on the collection and analysis of data and scientific evidence as a basis for decision-making around health intervention, to a 'sentinel' approach which is based on the premise of profound uncertainty about when, how and what infectious threats might emerge with catastrophic potential and thus for which we must 'prepare' (Lakoff, 2015). It is argued by David and Le Dévédec (2019) that this still emerging

yet already taken for granted imperative for epidemic governance has received little critical attention. They argue that the preparedness paradigm's sentinel orientation – characterised by technical approaches such as surveillance, scenario simulation, and vaccine stockpiling, and embodied by relatively new organisations like the public-private partnership Coalition for Epidemic Preparedness Innovation (CEPI) (set up by states in the World Economic Forum) – has the 'insidious political effect' of 'maintaining the existing social and economic order with its inequalities' (p. 5). The authors argue that this delinks epidemics from their social and historical context and directs (and even siphons) resources away from more preventative and equitable approaches such as strengthening public health services, and thus may even result in greater vulnerability to disease. Contextualising this within a global political landscape, David and Le Dévédec (2019) further argue that 'preparedness indeed makes up more the Western world's preparation, than it fosters the development of local capacities for response; a system of inequalities intrinsically linked to globalization' (p. 5).

Mwacalimba (2012) offers a clear example of how the international preparedness agenda around avian flu butted up against national context and priorities in the low-income country of Zambia. Via goading from the global health community, including through the development of pandemic preparedness plans encouraged by the WHO, the country spent many resources in surveillance and preparing for the disease's 'inevitable' arrival – even while other pressing health and economic issues (that did not necessarily present a 'threat' to global health) were at hand. According to a 2019 report by the Global Preparedness Monitoring Board, hosted by the WHO, only 59 countries have developed National Action Plans for Health Security (NAPHS) (2019).

Centring surveillance

As suggested above, the activity of epidemic surveillance, taken to a global scale, is seen as central to good governance of global health and, more specifically, to 'secure' and 'prepare' for the inevitable emergence of infectious threats. As already noted, surveillance was codified in the new IHRs. It is imagined to work in a relatively linear and straightforward way. Upon community-level detection, primary public health is to implement immediate control measures and report upwards to intermediate public health authorities, who then confirm the event and support control measures, and further escalate reporting if appropriate to the national level. Upon reaching the national level, WHO is to be notified immediately while formal assessment takes place alongside additional support for containment and control measures and the establishment of an emergency response plan. The WHO may declare a public health emergency of international concern (PHEIC) if there is threat of international spread that will require an internationally coordinated response (Baker & Fidler, 2006).

To comply with the IHRs, member states are obliged to set up infrastructure to carry out surveillance and deploy appropriate responses, with the WHO playing a technical assistance role. However, with no funding mechanisms attached to member state obligations, poorer countries have largely been unable to comply resulting in inadequacies particularly at community and intermediate levels. This has been a major and enduring critique of the latest IHRs (Baker & Fidler, 2006). Writing in 2015, McInnes reports that 70% of member states have failed to meet their surveillance and reporting capacity targets due to financial constraints – many of which are countries in which infectious diseases are more likely to emerge. McInnes also argues that more robust mechanisms for monitoring IHR compliance are needed as current approaches rely on self-assessment. This concern with 'enforceability' and accountability of member states is echoed by Rubin and Saidel (2016) who, writing from a more stringent 'threat analysis' perspective, suggest an altogether novel governance structure which includes a 'built-in judicial forum' to legally bind parties who will then face penalties for noncompliance.

Worsnop, writing more recently (2019), and basing her analysis on health event data from 1996-2014, argues that while current policy focuses on the improvement of domestic outbreak surveillance to reduce reporting lags, conventional explanations that centre on inadequate capacity continue to overlook the still powerful political and economic incentives of states (including actors at local and intermediate levels) to delay reporting. She notes that the ability of the WHO to rely on informal sources of information is used with hesitance, and argues for more proactive approaches including naming and shaming, and guaranteeing states (and local actors) resources for recovery from any potential economic losses. This is in contrast to Davies (2012), who earlier argued that East Asian countries had come to accept this duty as an international norm and characterising this as indicative of a successful post-Westphalianism.

Critiques of the 'sentinel' approach: perspectives from social science

Social science perspectives have been more critical of the surveillance orientation of epidemic governance that has emerged over the last two decades. Dry (2010), commenting on the updated IHRs which went into effect in 2007, has critiqued their strong orientation to surveillance, and specifically, to their focus on rapid identification of outbreaks and response. This short-term temporal emphasis has the effect of obscuring the longer-term, broader contours of disease emergence, and thus efforts to address them. She also critiques the way in which informal information has been embraced as acceptable surveillance data (otherwise conventionally considered a 'revolutionary' measure – see Fidler, 2004) for the reason that communities from which data comes are themselves not necessarily informed and thus cannot use this knowledge to mount local responses, whether to acute disease situations, or to address longer-term slower moving trends. At the same time, national focus on building up surveillance systems to comply with the IHRs may come at the expense of building stronger health systems. Indeed, Blouin Genest (2015) offered the critique of the IHR and surveillance as indicating that 'global public health is not involved in a "war against diseases", which would warrant more concerted attention to building stronger health systems, but rather in a 'war against the circulation of specific risks' (p. 609). He argues that the surveillance orientation of the IHR and global health positions globalisation, trade and travel as both the *cause* of global health risks, and the objects which should be protected *from* public health policy ('excessive' trade and travel restricting measures erected by states against states of outbreak origin); this construction of risk obscures any focus on more 'static' (endemic) objects of global public health, such as the social determinants of health.

Scoones (2010) also critiques surveillance as promoted and practiced by the WHO and its networks, focusing on the assumptions built into the approach: that surveillance will catch relevant data, and that this data can and will lead to appropriate response in a linear predictable way. These assumptions are blinkered in relation to uncertainty and illustrate institutional pressures to 'close down around risk' and to conjure an illusory sense of knowableness through tools like epidemiological models. This also values certain forms of information and knowledge (biomedical, epidemiological, technical) while excluding others that do not fit into the dominant paradigm. Longwave, or even shortwave social, ecological and political factors and dynamics, and the contextual nature of these in speaking to disease emergence, are ignored. While technical/narrow 'risk assessment' can result in precision, this does not necessarily result in accuracy (Scoones & Stirling, 2009).

Ebola in West Africa: triggering shifts in epidemic governance?

Between 2013 and 2016, an Ebola outbreak originating in Guinea quickly spread across the region, including into urban areas, leading to an epidemic of the haemorrhagic fever of unprecedented scale. The scale and speed of its spread revealed weaknesses in global health

governance – including the utility of the IHR. As suggested above, limited progress on commitments made by member states in the context of the IHR to develop 'core public health capacities' including surveillance, diagnostic and response infrastructure were again highlighted (Ghebreyesus, 2019; Gostin & Friedman, 2014). As three of the poorest countries in the world, Guinea, Sierra Leone and Liberia, which had also been through recent civil wars, had public health infrastructures for surveillance, detection and primary care that were particularly weak and inequitable (Bardosh et al., 2016).

Harman and Wenham (2018) argued that initial assumptions about the eruption of Ebola in West Africa – that it would be much like previous outbreaks – led to critical shortcomings in relation to a gap between global health (security) and medical humanitarians, despite the sectors having often been co-dependent. The latter were not included in response planning or strategy, which itself did not include or consider many humanitarian dimensions of response (food security, shelter, women, care for survivors etc), and yet it was the humanitarian sector who were on the frontlines of the quickly escalating crisis. The situation led MSF to decry the WHO for its slow and inadequate response. Indeed, much criticism has been directed at the WHO for its delay and inadequacy, although this has also been recognised as the result of the organisation's limited resources and narrow mandate to deliver technical rather than operational support (McInnes, 2015). Others have also recognised this delay within the context of global power structures: only when the US and Europe themselves began to panic did concerted action at the global level really get going (Bardosh et al., 2016).

A number of high-level independent assessment panels convened in the aftermath of the epidemic to focus on understanding the failures of the response, and to issue recommendations for governance reform (Moon et al., 2015; National Academy of Medicine, 2016; UN, 2016; WHO, 2015). Recommendations in these high-profile discussions have centred around preventing and responding to outbreaks through reforms to the role and responsibility of the WHO, bolstering the IHRs, developing clear pathways of coordination to involve the UN system, civil society and other private sector actors during health crises, and the creation of a framework and funding mechanisms for research, development and roll-out of medical technologies during an outbreak (Coltart et al., 2017). More specifically, WHO-centred recommendations included the establishment of a dedicated Centre for Emergency Preparedness and Response, supported by a protected budget furnished by member state and multilateral donor contributions. Other specific recommendations included better support and more robust staffing reforms in WHO vulnerable country offices, supporting (through, for instance, financial and 'commendation' type incentives) investments in 'core capacities' of the IHR, formalising regional and sub-regional arrangements for prevention and response, and the establishment of a UN Accountability Commission to oversee the WHO's new response centre and monitor IHR compliance etc. (Coltart et al., 2017).

WHO member states would go on to approve a comparatively modest set of reforms, including the establishment of a separate but centrally managed Health Emergencies Programme (WHEP) across the WHO's three levels with a more operational remit, an increase in WHO's emergency budget by $160 million, the creation of a global health emergency workforce, IHR implementation and monitoring support, a contingency fund of $100 million, and a plan for enacting research and development of medical technologies during emergencies (Mackey, 2016). A framework to engage 'non-state actors' (FENSA) was also established. These reforms were variously received. Yach (2016), for instance, argued against the more operational turn, arguing for the WHO to refocus on its central role as a normative organisation, and as 'the global health conductor of an emerging health orchestra' made up of other UN agencies, NGOs and other more operationally competent private actors (p. 1905). A 2018 report by the Independent Oversight and Advisory Committee (IOAC) established to monitor the WHEP concluded, however, that 'significant progress' in relation to how quickly health emergencies were assessed and in its coordination with and support of

partners, including humanitarian organisations, had been made, as assessed through 44 successful early responses (2018). Limited or overly rigid funding, limited and insufficiently diverse human resources, bulky partner vetting procedures, and lack of awareness of the programme and standard operating procedures were noted as challenges (IOAC, 2018, 2019). Nevertheless, early interventions in 44 emergencies since the programme's launch and its 18-month review were framed as evidence of success by the IOAC.

More recently, in 2019, the WHO announced another set of reforms to 'address gaps in [universal health coverage], health emergencies and healthier populations' after a 20-month consultation (Ghebreyesus, 2019). The reforms have been described as 'top-heavy' in focusing on the internal structure of the secretariat, and signalling of a more centralised and less fragmented organisation (Lancet, 2019). More sustainable and flexible funding mechanisms are envisioned, and a Division of Emergency Preparedness has been established to bolster WHO's existing work in this area. Some have questioned to what extent the reforms may represent a necessary 'transformational shift' or 'simply a shuffling of clusters and staff' (Lancet, 2019, p. 1071), especially in relation to the sustainability of its funding and the independence of regional offices, referred to by some as the WHO's 'birth defect' (Kupferschmidt et al., 2019).

As suggested earlier in this report, discussions about reform and governance at the global level in the wake of the West African Ebola epidemic have also recognised the importance of engaging with, and learning from, communities. Margaret Chan, in a speech on what had been learned from Ebola, stated that communities must be listened to, and that empowering them 'must be an action, not a cliché' (WHO, 2015). Despite her words, it remains technical solutions and dimensions which are foregrounded – the 'staff, stuff, space and systems' evoked by Farmer (2014) (Parker et al., 2019). For a more transformative governance, Bardosh and colleagues (2016) argue:

> *the conversation should therefore not just be about improved coordination or budgets for emergency response, but about how they can institutionalize plural forms of knowledge and involve local communities meaningfully from the start. Accepting the counter-intuitive notion that effective epidemic response might not rely on everyone accepting the same worldview is a prerequisite.* (p. 119)

The next section explores these issues in more depth, arguing for a centring of community experience, knowledge and priorities in epidemic governance.

Critical and 'bottom-up' perspectives to epidemic governance

Issues of 'governance' in relation to epidemics tend to be read as relating to the actions, roles, responsibilities and relationships of global and international organisations, and national governments, and formal and informal instruments, arrangements and norms at these levels. Rarely are discussions of epidemic governance held with specific attention to community level impacts, dynamics and potential. This section attempts to describe some of the more critical literature around epidemic governance, and to shine a light on issues highlighted by social science research, especially anthropology, on epidemics and response at the community-level, with an emphasis on the West African Ebola outbreak of 2013-2016. Such research is rarely framed within a discourse of 'governance', but nonetheless has profound implications for governance. Considering community-level governance and challenges alongside those at the global and other levels will be crucial for just and effective future epidemic response and health emergencies (Raguin & Girard, 2018).

Alternative narratives and response pathways

The same forces that orient surveillance emphasise shortwave dynamics and privilege certain forms of knowledge, resulting in particular types of response. Social science perspectives have used political economy analyses to present both conventional responses, and the governance arrangements behind them, not as inevitable, but as particular types of arrangement, propped up by particular interests, powerful actors and interlocking institutions and norms. Dominant pathways emphasising real-time surveillance, rapid top-down mobilisation of technology and medical and epidemiological personnel to halt transmission, and the stockpiling of vaccines and preparedness plans in wealthy countries, are argued to rest on normative interests and to privilege populations who are least at risk even while promoting ideas of global mutual vulnerability (Leach & Hewlett, 2010).

Critics are careful to suggest that while the medical/epidemiological/technical dimensions of epidemics are important, they are only part of the story, and argue that governance must 'open up to recognise and support multiple narratives about epidemics and their associated pathways, including alternatives which embrace strategies for resilience and robustness and which support the perspectives and goals of poorer people living with disease in localised settings' (Leach et al., 2010, p. 370). Through analysis of discourse surrounding SARS, Zika and West African Ebola epidemics, Kapiriri and Ross (2018) found that the narratives of those most affected were underrepresented in medical, social and political literatures. Narratives foregrounding human-animal interaction and forest destruction dominated discourse around the West African Ebola epidemic, which, alongside classic 'outbreak' narratives, frequently implied that 'culture' was to blame (Leach, 2015). Under appreciating structural violence and inequitable histories has material consequences for response.

Alternative narratives may thus emphasise complex social or environmental dynamics, embrace uncertainty, value local knowledge and experiences of disease outbreaks (which while seeming to be of novel diseases, often are endemic) and localised ways of managing it. They can reframe diseases, such as avian flu for instance, as a local livelihood problem rather than a global health security problem; or recognise the gendered nature and burden of care which underpins epidemic response, and indeed global health itself (Harman, 2016; Richards, 2016; Scoones & Forster, 2008). Highlighting these hidden narratives can legitimate alternative pathways of response. From control strategies that assume baseline stability ('equilibrium responses' focused on stopping disease transmission once it begins through medico/technical 'solutions'), more responsive, adaptive and socially just responses might focus on broader ecological and social dynamics which may be driving the increasing frequency of outbreaks, surveillance could happen in a more participatory way, and disease responses could be more locally led.

One Health: integrative responses to disease

The need for more complex approaches to infectious disease has not gone unrecognised outside the realm of social sciences. Attempting to tie together multiple perspectives on zoonotic disease emergence and strategies for prevention and response is the 'One Health' approach. On paper, One Health brings together practitioners, researchers and policy makers across disciplines and sectors to break down what have been traditional siloes between human, animal and environmental health. Integrated insight from social, ecological and medical sciences is sought in order to better understand the complexities behind the emergence of infectious disease and, in light of this, how better to address it. This has obvious implications for health governance at multiple levels and the tripartite relations between the WHO, Food and Agriculture Organization (FAO) and World Organisation for Animal Health (OIE), expressed through the spirit of One Health, is the most visible and emblematic example of the reach of this ideal (WHO, 2017). The logic and rhetoric of 'One Health' has also been adopted to launch a number of research initiatives, large-scale

interventions, policy efforts, partnerships and networks at national, international and global levels (Bardosh, 2016).

In the words of Waltner-Toews (2017), however, 'while attractive as a goal, such a transcendent, integrative notion of health has presented some intractable problems in practice' (p. 2). Social science perspectives in particular have continued to be marginalised under the One Health umbrella, while a 'technocratic tyranny' which continues to privilege biomedical and natural scientific narratives has dominated. Visions of ever more sophisticated and precise epidemic prediction models have been held up as the 'holy grail' of what One Health has to offer (Bardosh et al., 2016). As suggested above, this sustains a narrow, technical view of what is considered relevant for the investigation and addressment of zoonotic infectious disease. This is, in part, due to dominant cultural notions around what counts as evidence, as well as policy makers' political incentives to support tractable and measurable solutions (Leach et al., 2010). The complexity – or 'wickedness' – of problems of infectious disease – both those which can emerge explosively (such as Ebola) and those which move more slowly and under the radar (such as salmonellosis) – may be better recognised and dealt with by narrative-based approaches which can account more fully not only for their social, economic and political drivers and impacts, but also for the different sets of knowledge, values, priorities, interests and trade-offs that particular pathways of response may serve (Bardosh et al., 2016). Conceptualising and tackling problems of infectious disease through the lens of complexity – which the One Health paradigm at least rhetorically embraces – then obligates the creation of platforms and spaces where 'constructive conflict' between a variety of perspectives and narratives can occur in order to inform decision making (Waltner-Toews, 2017).

Anthropologists in disease response

While it is imperative to more meaningfully embed recognition of the complexities and dynamics of social, economic and ecological interactions driving disease emergence over the long term into governance for research and policy, practically preparing for and addressing health emergencies in real time also requires a variety of perspectives. However, views which focus on social and political dynamics continue to be less prominent than operationally focused perspectives. Yet, since the year 2000, medical anthropologists have been formally consulted and included in Ebola responses led by the WHO, if only on an ad hoc basis (Hewlett & Hewlett, 2008). Despite the fact that the value of their insights has been and is increasingly recognised, the methods, interventions and lessons they bring to the table are not always taken up by response actors and there is still limited systematic mechanisms through which anthropologists and other social scientists are included in emergency response (de Vries et al., 2016; Stellmach et al., 2018; WHO et al., 2018).

This included the response to the 2013-2016 Ebola outbreak in West Africa, which has been assessed as initially 'top-down' and less inclined to engage with social scientists in the early days (Laverack & Manoncourt, 2016; Martineau et al., 2017). Rather, loose networks of anthropologists self-organised to provide expertise and consultation in platforms such as the Ebola Response Anthropology Platform, and were eventually welcomed to the table by response leadership as command-and-control models of response failed, and the outbreak advanced with unprecedented scale and speed. Martineau (2017) reflects on this engagement and the politics of 'expert' knowledge in shaping response, noting that this was conditioned by planners' instrumental perceptions of anthropologists as 'culture brokers' who could facilitate communities' acceptance of the technical interventions seen as necessary for outbreak containment (Abramowitz, 2017). While this identity caused discomfort, it was also leveraged strategically by anthropologists. Through processes of negotiation, they were able to shape some aspects of response and thus likely played an outsized role in helping to contain the outbreak in relation to the extremely limited resources dedicated to their involvement (Abramowitz, 2017; Martineau et al., 2017). This included more nuanced

perspectives on, and strategies to improve, 'community engagement' which, while seen as an essential element of response, was initially clumsy and handled in a technocratic way (Laverack & Manoncourt, 2016; Stellmach et al., 2018).

Community Engagement

It is now widely accepted that community engagement, largely missing in the early stages of response to the West African Ebola outbreak, was crucial to its eventual containment. What began as a technocratic, top-down and poorly coordinated response to the outbreak quickly spiralled out of control in the context of fragile states and weak public health infrastructures. The gap in quality community engagement has been recognised by some of the high-level panels mentioned above and several highly cited papers on 'lessons' from the Ebola outbreak, with some including recommendations for early and effective community engagement in future health emergencies (Coltart et al., 2017; Moon et al., 2015; WHO, 2015). In these discussions, however, 'community engagement', or sometimes 'mobilisation', is rarely interrogated or analysed further, even while it is presented as an essential ingredient for successful response. Indeed, during the response itself, the only qualitative measure of community engagement reported in official Situation Reports was 'resistance' (later, 'reticence'). Perspectives from the social sciences can help fill this gap in the 'governance' literature. Through elevating and interrogating 'community' and 'engagement' in the discourse and accounts of epidemics, alternative narratives and pathways of response are revealed, and crucial bottom-up insights gleaned for more effective governance.

Interrogating 'community'

Local politics and leadership

A first lesson in supporting governance from below is the danger of assuming 'community' in response planning and implementation. Wilkinson and colleagues (2017) take a critical perspective on the tendency for public health – including epidemic response strategies – to operate from a starting point wherein 'community' is taken as the primary unit of engagement. Strategies underpinned by assumptions of imagined homogeneity and stasis mask over local social complexities, relations, histories and dynamics and are at high risk of failure. At best, this may mean that such strategies are ignored, or some social groups are excluded; at worst, such interventions may result in violent resistance. One recurrent theme in anthropological literature which challenges this notion is the identification of 'community leaders' by external or higher-level response actors to serve as liaisons, representatives and 'mobilisers' of local people. Anoko (2014), for instance, detailed how the reaching out to chiefs and district officials in Guinea's forest region by various Ebola response partners led to sometimes violent resistance from the people who did not trust the colonial-era power structure of which these 'leaders' were a part. Politicization of, and alienation from, sensitisation activities as perceived by residents in the area would also eventually lead to the tragic killing of eight individuals including the region's governor, a number of doctors and journalists, and a Christian pastor (Fairhead, 2016). National politics would also have implications for trust; the fact that Sierra Leone's outbreak originated in a region known as an opposition stronghold fed rumours about intentional delays from national leadership while, even more broadly, corruption scandals across the three countries reinforced widespread mistrust (Bardosh et al., 2016). Anthropologists have emphasised the point that 'in no setting can leaders or fault lines be assumed' (Wilkinson & Fairhead, 2017, p. 24).

Indeed, narratives about Ebola are often articulated as unfolding between 'the response' and 'the population', without attention to the (il)legitimacy of community elites who are often tapped to provide local leadership and serve as liaisons with the wider response. Parker and colleagues (2019) have proposed the notion of 'public authority' to more accurately describe

influence and legitimacy. Sometimes this overlaps with degrees of formally recognised authority, but very often it does not. For instance, the influence and power of 'secret societies' in areas affected by the West African Ebola epidemic has been commented upon by many. In the Sierra Leonean village in which Parker and colleagues (2019) conducted their research, it appeared that collective agreement not to comply with the mandates of the official response (to report cases, send sick people to ETCs, and call for burial teams) was in fact influenced by the local secret societies. Marcis and colleagues (2019) further problematise the notion of 'legitimacy' itself by challenging assumptions of stability. They argued that rather than something static, power and legitimacy are rather constantly negotiated and contested over time, shaped by social and economic relations rooted in historical and current lived experience. This contestation can become intensified during emergencies; influence can be wielded and challenges made even by people who typically hold no formal or traditional power, including against leaders tapped by the broader response. Thus, community-watch committees established by the United Nations Children's Fund (UNICEF) were rejected by foreigner- and elite-wary youth in Guinea; youth and women rose to defend and negotiate for community needs when a large and frightening Ebola Treatment Centre (ETC) was proposed in their neighbourhood in Monrovia to much local protest; and young men rejected the sudden closure of a market in which they worked, and retaliated violently against local authorities whom they blamed for profiteering and deception in Sierra Leone. These examples illustrate that 'effective community engagement requires a dynamic awareness of history, context and power that remains conscious of how legitimacy and authority are pursued or rejected, volatile or stable, won, contested or undermined, hoarded or distributed, and how they change over time' (Marcis et al., 2019, p. 29).

Gender

Another dimension of 'community' frequently ignored by conventional epidemic response planning is intra-household and community-level gender roles. Differential expectations along gendered lines can mediate the types of transmission risks and patterns that women and men are exposed to, as well as the roles they are likely to take on amidst an outbreak. In Liberia, men were more likely to take on roles on community task forces, performing surveillance, enforcing quarantine and travel restrictions, and reporting. The mobilisation of men (often young) in this way raised concerns about, and to some extent resulted in violence and the 'remilitarisation' of social life (Abramowitz et al., 2015). In relation to care, while men were more likely to be involved in transport, women were much more likely to be involved in caring for the sick at home. Indeed, Harman (2016) revealed the significant additional burden of free care and labour absorbed by women during and after the epidemic, even while they continue to be virtually invisible in epidemic narratives and in global health governance more broadly. While infection and fatality rates did not bear out very differently between men and women in the epidemic, the fact remains that due to various formal and informal norms and institutions, the division of labour in epidemics is profoundly gendered.

The implications for response of ignoring community dynamics around who should be identified as community leaders and how women and men might be differently engaged and supported - in planning stages and as crises unfold in real time - can be profound. Governance for epidemics should make space and resources available for thorough anthropological and historical inquiry that is attentive to intracommunity politics, power and gender dynamics as a matter of urgency in and throughout emergencies to ensure that affected communities are supported appropriately and reflexively.

Reframing 'resistance': challenging culture and community as obstacle

Although very poorly defined and never well measured, the notion of 'resistance' was articulated widely during the Ebola outbreak to refer to forms of real or perceived non-compliance, which had the effect of framing communities as irrational (Abramowitz, 2017). Ignorance or 'culture' were frequently invoked as underlying such resistance, with educational or even militant responses seen as necessary remedies. The educational model rests on assumptions that a biomedical public health understanding of Ebola and of its transmission is the only legitimate view, and that people need to be convinced to abandon their 'wrong' beliefs. De Vries and colleagues (2016), for instance, commenting on the Ebola outbreak in Uganda in 2012, recounted how communities were regarded not as a resource for containing disease, but as a barrier. Their knowledge, culture and practices were exoticised, and the local framework of disease (witchcraft) simply dismissed. Framing local practices such as burial rites as 'bizarre' and exotic also had the effect of casting blame upon people for the epidemic. Cast as 'super spreader' events, 'traditional' burials came to be implicated in the outbreak (Benton & Dionne, 2015). Richards (2016) notes, however, that in Sierra Leone it was only after the practice of washing bodies was banned that reports of 'secret burials' and 'hidden bodies' began to emerge, as people took the 'law into their own hands' (p. 52). Thus, rather than blaming 'traditional' (non-compliant) funeral rites and practices for the continuing epidemic, responsibility can be redirected towards the responses' initial refusal to engage with and respect the significant social and spiritual risks local people associated with failure to appropriately bury their loved ones.

Narrow models of education and campaigning conceived by and explicitly or implicitly promoted by conventional epidemic governance approaches also ignore what may be very rational community consensus-making to reject public health information: if formal health facilities like ETUs are experienced as sources of Ebola transmission, or where sick loved ones are taken and never seen again, it will be difficult for people to trust messages centring on biomedical explanations and solutions (Chandler et al., 2015). Further, draconian measures such as the lockdown and forced militarised quarantine of West Point in Monrovia cut people off from accessing other basic needs such as food and medicine for non-Ebola related health issues, while lack of attention to wider grievances by response leaders has also been identified as generating mistrust on the part of communities in Guinea (Marcis et al., 2019; Wilkinson & Fairhead, 2017). In fomenting mistrust, coercive and neglectful responses can themselves generate resistance from communities to engage with the formal response (Mbaye et al., 2017). By considering communities' real-time observations, experiences and needs - coupled with social and political legacies that may reflect histories characterised by violence, corruption and state and health system neglect – alternative views of 'resistance' can come into focus (Abramowitz et al., 2018) and, with this, new implications for governance revealed.

Many communities were simply unable to comply with what response actors wanted them to do for lack of resources, appropriate information and support. Left with non-existent health services, unanswered hotline calls and only baseline public health information, communities were desperate for resources and practical information and training on how to manage quarantine, care and burial (Abramowitz et al., 2015; Richards et al., 2015). Furthermore, social science has demonstrated that people and social groups can and are willing and able to modify their cultural practices if they are respectfully included in planning and response, and are supported with necessary resources (Hewlett & Hewlett, 2008; Marshall & Smith, 2015; Ryan et al., 2019). Practicing safe burial which assuaged epidemiological as well as social and spiritual risks during the Ebola epidemic, for instance, would come to be seen as a major factor in stopping the outbreak. The initial insensitivity to this by the wider response, and the resistance it provoked, represents a profound failure of governance.

Undoing the effects of poor or non-existent early community engagement and lack of respect and empathy in the context of one epidemic is one thing, but institutionalising a humane, respectful and collaborative approach which is inclusive of people's knowledge, needs and priorities beyond biomedical framings of disease in the first instance may go a long way to preventing outbreaks from becoming large-scale emergencies in the future.

Building trust through openness, reflexivity and accountability

Coercive and authoritarian measures such as the militarily enforced quarantines and lockdowns on social and economic life in Sierra Leone seemed to belie a belief among national response actors that communities could themselves not be trusted to respond to Ebola appropriately (Bardosh et al., 2016). Rather, such responses likely had the effect of exacerbating the already tenuous trust of communities in government, formal authorities and external actors, as partially outlined elsewhere in this report. Reflections on the legitimacy of local leaders and intra- and intercommunity dynamics as related to community engagement for instance, are in essence discussions of trust, and the (un)willingness of response actors to take nuanced and contextualised approaches to engagement.

While such reflections are still relatively marginal and rare in the wider literature on epidemic governance, even rarer is research and reflection which attempts to capture positive examples of trust-building in response. Reflecting on the West African Ebola epidemic and interviews with 160 local, national and international responders, as well as lessons from existing literature, Ryan and colleagues (2019) offer a framework for generating trust in response by centring relationships and care through openness, reflexivity and accountability. These 'technologies of trust' reflect contrasting modes of engagement to those which characterised the top-down, cut-and-paste and technically focused earlier interventions of the response. *Openness* entails a willingness to listen to people in communities, including other responders, and a commitment to transparency and feedback in ways that are valued by communities. Fear among families of what might be happening to their loved ones in Ebola Treatment Centres (ETCs) was eventually countered by some ETCs, for example, by installing transparent plastic sheeting and by encouraging centre workers to visit families, who themselves may be in quarantine, with photos and updates of patients.

The second 'technology' of *reflexivity* is exemplified by being comfortable with the coexistence of multiple explanatory models. Indeed, this is a recurrent theme in the anthropological literature of epidemic response, and is linked to broader questions of taking local knowledge and models of disease on board rather than dismissing it as 'wrong'. De Vries and colleagues (2016) framed this as an ability to 'respectfully "agree to disagree"' while finding synergies between epidemiological and local understandings of and responses to, disease, to achieve goals rather than trying to convince or force people to believe or do things in ways that do not make sense to them, or which they find offensive.

Additionally, Ryan and colleagues (2019) stress that the reflexive approaches described by their respondents also entailed the encouragement of feedback and dialogue, and subsequently tailoring response activities and messaging to individual communities. Practically speaking, in the case of one ETC in Sierra Leone for example, a 'safe touch policy' was developed in spite of the official line against any kind of touch. Elsewhere, community desires for information and resources to address other pressing needs and priorities, such as malaria, were taken on board. The main lesson embodied here is the notion that 'learning happens best in practice, on the ground, rather than in far-off international boardrooms' (p. 5), and responders should be open to this.

Finally, *accountability* entailed a willingness on the part of responders to take responsibility for response failures, even if they were not personally at fault. Examples included independently organising or paying for food for patients or quarantined families when formal

arrangements fell through, failed to materialise due to corruption, or were never in place to begin with. A focus on providing care rather than 'interventions' was also cited; developing relationships and looking out for the wellbeing of patients and families, even beyond Ebola and periods of quarantine, was seen as conducive to trust building.

These 'technologies of trust' communicated a level of commitment to communities amidst the failures of the broader response, and were able to fill the gap left by formal strategies 'disconnected from priorities on the ground' (p. 6). That said, the instances documented were ad hoc, emanating from the practical and moral decision making of responders on the ground rather than the result of systematic efforts to ensure trust was embedded in response.

Community-led response

The initial failure of the state and international response to the West African Ebola epidemic, and the fragile contexts in which it unfolded, left a vacuum in many communities. Relaying the narratives of local community leaders across urban Liberia, Abramowitz and colleagues (2015) report the desperate demand in communities for guidance beyond the basic public health messaging which focused on the identification of Ebola and exhortation to seek early treatment. They reported wanting training on caring, isolation, quarantine, community-based holding centres, transporting the sick, isolating and burying corpses, hygiene, personal protective equipment (PPE) and disinfection for the management of community-based Ebola response.

However, shuttered hospitals and clinics, unanswered hotline calls, and the failure of treatment and burial teams to turn up meant that communities had to attempt to fill this void with local resources and governance. Their accounts detail planning and local governance – both tacit and deliberate – for prevention, surveillance, response, treatment and management of the outbreak's lasting impacts. These included the formation of local teams to support reporting, disseminate information, distribute resources for those in quarantine, and monitor compliance to movement restrictions. Local forms of triage, home-based care and makeshift PPE with available resources such as plastic bags were also reported. Ryan and colleagues (2019) described an initiative called 'room care' run by a Liberian women's group to bring local women together for training, support and knowledge exchange on how best to care for patients at home. Practices of self-isolation and transport of some infected individuals and community planning for the care of orphaned children and more were also reported.

While the innovation and solidarity displayed by these community leaders points to capacity among local communities to self-govern and act despite extremely limited support, Abramowitz and colleagues (2015) remind us that this is the response to a 'condition of medical statelessness and structural violence' (p. 14). Given appropriate support and information, the will and potential embedded in communities to mount locally-led responses is likely to have a significant impact in the context of an epidemic. While this is increasingly recognised, including by epidemiological modellers who have previously resisted accounting for human behaviour (Funk et al., 2010), this dimension of response and governance continues to be marginalised in mainstream discourses of epidemic governance.

In contrast to perceptions and popular representations of people in African regions where Ebola has emerged as 'backward', and blindly following bizarre and disease-spreading cultural traditions, many have rather engaged in a kind of 'people's science' (Richards, 2016). Amidst understandable mistrust in authorities and the formal response – or indeed in the absence of any formal response at all – affected communities nonetheless learned to 'think like epidemiologists' (Richards, 2016) and adjust their behaviours and innovate to care for the sick and bury their dead through experience and empirical observations. Parker and colleagues (2019) provide a 'fine grained' account of a Sierra Leonean village where the

'stuff, staff, space and systems' (Farmer, 2014) of formal response never arrived, and indeed which has historically been passed over for state resources. Fearing the prospect of sending loved ones to a distant ETC – the likes from which it was widely perceived bodies would not be returned – the community, including locally legitimate leaders, agreed not to report illness or deaths as mandated. Rather, they observed their way through a 'moral people's science', learning how to nurse the sick and bury the dead based on existing and emergent knowledge. After being 'found out', the community was forced to send their sick to the ETC at gunpoint. Those they had cared for in the village had a higher survival rate, and they never received the bodies of those who died at the ETC.

This does not suggest that ETCs (or other technical investments) are bad in principle; indeed, improved protocols in these centres would, over time, lead to better outcomes. What it does suggest, however, is reconsideration of how 'assistance is provided and communicated'. For Parker and colleagues (2019), this means that home care should be supported not ignored, people's social and spiritual needs around burial must be attended to, and authoritarian measures reconsidered. More broadly, this requires more meaningful engagement with local historical, political, social and economic specificities. Failure to attend to these issues risks lives.

From community engagement to community led response

One example of a well-regarded community engagement model that was taken to scale in Sierra Leone was Community-led Ebola Action, or CLEA. CLEA was the flagship programme of the Social Mobilisation Action Consortium (SMAC), itself an element of the 'social mobilisation pillar' of the response led by UNICEF. The programme was designed to go beyond the conventional approaches to community engagement, which were initially focused on disseminating messages about what Ebola was and what people should do. Fear and confusion generated by the standardised, alarmist and sometimes contradictory messaging is thought to have bred mistrust and discouraged people from seeking care (Bedson, 2015; Richards, 2016).

Modelled on Community-led Total Sanitation (CLTS) and drawing on participatory rural appraisal techniques, SMAC trained local 'community mobilisers' to 'trigger' collective action in over nine thousand rural and urban communities – reaching 60% of Sierra Leonean territory. Through facilitated deliberation, communities would come to understand the situation and develop their own action plans to handle response in locally appropriate and realistic ways (Bedson et al., 2015). This emphasised community-based case identification and reporting, and locally tailored communication strategies which spoke to community concerns and priorities. The programme included follow-up visits to the same communities and weekly collection of quantitative and qualitative data on community activities – unusual for social mobilisation strategies (Abramowitz, 2017). Increases of 9% and 23% in the number of safe burials reported and within-24-hour referrals for sick individuals respectively were recorded during follow-ups (Bedson et al., 2015).

While the programme was generally regarded as a positive example of 'deepened community engagement' which seems to have measurably made a difference by empowering rather than imposing upon communities, we are yet cautioned not to over-romanticise. Recounting an experience in a meeting in a community in which CLEA activities had taken place, Wilkinson and colleagues (2017) tell of a lack of empathy for a desperate family who had insalubriously disposed of the body of a child, and remind us of the dangers of assuming 'community'. Richards (2016) also challenged the model of 'deliberation' as an effective mechanism for triggering collective action, sharing the story of a community in which symbolic and performative dance was a more appropriate medium (p. 140-141). While neither point invalidates the CLEA model – indeed, the flexibility and reflexiveness built into the CLEA approach theoretically makes room to accommodate these critiques – we are moved to consider these and other issues in the governance of community engagement.

The SMAC model offered a scalable, structured, yet flexible and adaptive approach to social mobilisation which centred and elevated community action and solutions. While such work is intensive and complex, often retaining a diminutive 'add-on' status in comparison to medical and technical investments for emergency preparedness and response (Bedson, 2015), its benefits are likely to significantly outweigh its costs. Indeed, the late mobilisation of meaningful community engagement and mobilisation in the West African Ebola epidemic is acknowledged as an extremely costly mistake. In putting forward lessons for community engagement for epidemics in the wake of West African Ebola, Gillespie and colleagues (2016) argued for early engagement, concerted efforts for understanding social and behavioural dynamics to shape response, adapting to the evolution of the epidemic and to feedback from communities, and facilitating a more central and active role of communities with mutual accountability mechanisms. Indeed, by recognising the power and potential of 'governance from below' and investing accordingly, epidemic response can be made more effective.

Conclusion: What for governance then?

Paying attention to multiple narratives – especially those 'from below', examples of which are presented above – has the potential to reshape epidemic governance at multiple levels, and thus result in more effective and equitable epidemic prevention and response. Accounts from social science and anthropological literatures challenge the primacy in governance debates of techno-scientific knowledge and expertise, and the widespread focus on the roles, relationships, norms and procedures of global and national actors in epidemic response. Such accounts render visible the costs of underprioritising or ignoring altogether substantive engagement with people directly affected by epidemics, and of ignoring the multiplicity of relevant localities and the diverse social, economic, political and ecological dynamics which characterise them. We argue for governance debates and approaches to more consciously engage with accounts 'from below' and for those rendering such narratives visible, to more consciously spell out the implications of these grounded experiences for governance more broadly. We have identified four governance challenges which trouble existing approaches, and which have implications for understanding and action. We argue that more effective epidemic response hinges on the extent to which governance approaches can address challenges of inclusivity, interdisciplinarity, intersectorality and scalability. These challenges are elaborated below.

Inclusivity challenge

Epidemic governance informed 'from below' requires asking questions about whose voices, knowledge, needs, priorities and solutions are solicited and tabled in conceiving and implementing pathways of response prior to and during health emergencies. More importantly, efforts must be made to ensure equal and meaningful participation of a range of diverse people, not least of whom are citizens who are themselves most vulnerable to epidemic shocks, across what may be very diverse communities with diverse circumstances and needs. Sensitivity to 'community' level dynamics, including what locally legitimate leadership and authority looks like, and how an epidemic may impact men, women, children, the elderly and people with disabilities in different ways is essential for mounting just and equitable responses. Both formal and informal forms of expertise need to be mobilised, with synergies respectfully found between medical-epidemiological and local explanations, priorities, strategies and capacities. Indeed, as reflected in this report, much potential is embedded in communities themselves, and they must be included in planning, implementing and adapting response as necessary, and supported appropriately. Meaningful, contextually relevant community engagement and mobilisation can build trust and lay the groundwork for effective prevention and response, as illustrated by the CLEA model utilised in Sierra Leone (Bedson et al., 2015). Institutionalising support, preparation and the necessary flexibility for tailored engagement, mobilisation and action at all levels of governance will require

substantial resources and present governance challenges, but the benefits are likely to far outweigh the costs.

Interdisciplinary challenge

Perspectives from the social sciences, and particularly those which are more attuned to 'thick' understandings of context and to the existence of multiple forms of knowledge, are well placed to help bridge formal governance debates and strategies with the needs and knowledge of people 'on the ground'. By calling attention to the specificities of place, including complex, layered and shifting power dynamics, as well as how people understand and respond to epidemic disease, social scientists such as anthropologists can play crucial roles in decision-making to ensure solutions are 'grounded in the realities and practices of planners, responders and the communities they serve' (Fosher & Lathrop, 2005, p. 4). Indeed, their participation in the West African Ebola epidemic likely had an outsized, positive effect in helping to halt the disease. Calls have been made for more collaboration between epidemiological and social and behavioural science research in the context of epidemics. Abramowitz and colleagues (2018), for instance, have argued for the development of systematic ways in which qualitative socio-cultural data can be quantified for use in epidemiological research, the creation of qualitative indicators and composite social indexes that can be deployed during epidemics, and the establishment of formal interdisciplinary collaborations as opposed to the ad hoc engagement which, for instance, characterised anthropologists' integration into the West African Ebola response. More systematically engaging anthropologists and other social scientists brings with it challenges of integrating diverse foci, methods, procedures and perspectives not only between social and biomedical and other disciplines, but also within the social sciences. That One Health frameworks for understanding and responding to disease are already enthusiastically embraced by the global health community is a useful jumping off point from which to make the case for more meaningful interdisciplinary collaboration which takes seriously perspectives from the social sciences, and creates space for productive tensions between disciplines.

Intersectoral challenge

The West African Ebola epidemic revealed poor coordination between humanitarian actors and the WHO, prompting calls for closer ties between these different sectoral actors. Views from below also underscored, however, that outbreaks and epidemics do not emerge in a vacuum, but are rather driven by complex social and economic processes. One Health frameworks for conceptualising, preparing for and responding to epidemics of disease speak to some of these processes, highlighting the importance of engaging non-health actors and considering the impacts of non-health policies in driving, but also minimising and responding to infectious threats. Indeed, health 'security' is closely intertwined with many other types of security – food security, economic security and so forth – both in the context of epidemics and the periods of time which may lead to them. This underscores the importance of considering health in all policies. Intersectoral cooperation is also essential in planning for and amidst an epidemic as people's multiple needs do not go away, and indeed are amplified during health emergencies. It is imperative that people are able to receive and transmit essential information, commute safely and efficiently to seek treatment, engage in livelihood, economic and social and spiritual activities, and acquire essential supplies like medicine, food and financial resources. Any restrictions to movement and economic or social life must be met with compensatory measures to ensure people's multiple needs are met in a sustainable manner. This requires mobilising a wide range of actors at multiple levels, and the nurturing of relationships and understandings of responsibilities in relation to action for infectious threats (and indeed, other health issues and emergencies). Convening and coordinating such a wide range of diverse actors with diverse interests and perspectives is a challenge, but essential for mounting effective response.

Scalability challenge

Addressing epidemics in the context of a highly globalised world certainly demands collaboration at global and national levels. The focus of governance at these levels, however, underemphasises the implications of the specificity of place, and the diverse needs, circumstances and capacities of communities affected by epidemic shocks on the ground. One-size-fits-all protocols for information dissemination during a health shock, for instance, may be easier to design and deploy widely by national and global actors, but their disconnection from the people and contexts in which they are rolled out may undermine their effectiveness. The real challenge thus remains the institutionalisation of processes which enable the design and scaling up of more contextually appropriate and sufficiently flexible models of disease response which centre the needs of diverse communities on the ground. Such processes must also be aware of the ways in which dynamics and events at any level of the system, from the 'local' all the way up to the global, can and do influence what happens in other parts of the system. Thus, vulnerabilities at the local level can have big, often unpredictable implications for regional, national and global systems and vice versa. In this way, response must also be sensitive to cross-scale dynamics and interactions. This includes expansion of the temporal scale seen as relevant in addressing epidemics from the emphasis on the immediate to also consider the longer term, multi-level processes that can generate epidemic vulnerabilities, such as forces which perpetuate or even exacerbate inequalities and drive ecological shifts.

Opening up governance

This report has attempted to trace the broad contours of epidemic governance as it has evolved over the course of the 20th and 21st century. The literature concerned with governance and disease both historically and today has tended to focus on formal actors, relationships and institutions at the global level. This story begins with the state-centric horizontal models focused on preventing the transboundary spread of disease, and moves on to account for the 'vertical' reorientation onto health issues within countries. Although this shift may have initially arisen out of emergent human rights narratives in the wake of the second World War, espousing concerns for expanding access to primary care and building up health systems, the model which emerged at the turn of the century was something quite different. Influenced as well by the MDGs, it had evolved to be primarily concerned with tackling specific diseases (such as HIV/AIDS and malaria) through stand-alone programmes and interventions primarily designed and led by external and (often) non-state actors. At the same time, concerns over rapid globalisation and the potential for bioterrorism bound concerns with national security and health together. This potent mix of circumstances, and the arrival and containment of SARS, legitimated a powerful role for the WHO, which asserted itself as the global conductor of epidemic response. Revitalised IHRs codified this role, and obligated states to build up surveillance capacities and to report outbreaks which may constitute PHEICs; they would now also be watched by a cadre of non-state actors.

The West African Ebola outbreak revealed profound shortcomings in these governance arrangements. A dire lack of capacity at the national and local level for surveillance and response was laid bare in these poor countries, as was misjudgement on the part of the WHO and national actors which sought to impose top-down and even authoritarian measures onto communities as the epidemic spiralled out of control. The rapid spread also revealed the vulnerabilities to epidemics that contexts with neglected health systems and excluded populations face, animating the warnings of critical scholars on the myopic focus of global health governance on technical dimensions of preparedness and response. In this report, by highlighting narratives and experiences 'from below', we show how epidemic governance needs to be open to and inclusive of a much wider range of perspectives, including researchers from the social sciences and citizens and communities who bear the brunt of health emergencies. This will mean not only hearing the voices of the latter in traditional

governance spaces, but respecting their knowledge and capacities, and decentralising planning and response in ways which empower people where they are both during and between health emergencies.

As this report comes to completion, the world is now in the grip of the COVID-19 pandemic. Inequities and system weaknesses are being laid bare in countries across the world, including in the global north. Indeed, in a turn of the tables, this deadly pathogen has moved southward from the wealthier countries of the north to threaten poorer populations with fewer resources to meet this challenge. The extent to which the perspectives, needs and capacities of the least powerful are centred in responses across the world – both on a global geopolitical level as much as within countries and communities – is still unclear. The pandemic may very well profoundly reshape global governance for infectious disease in the coming months and years. At this time of profound uncertainty, it is difficult to say what this may look like, but the principle challenges identified in this report, and the imperative of openness, are likely to remain deeply relevant.

List of acronyms

CEPI	Coalition for Epidemic Preparedness Innovation
CLEA	Community-led Ebola Action
CLTS	Community-led Total Sanitation COVID-19 Coronavirus Disease 2019
ETC	Ebola Treatment Centre
FAO	Food and Agricultural Organization of the United Nations
FENSA	World Health Organization's Framework of Engagement with non-State actors
GOARN	Global Outbreak Alert and Response Network
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome IHR World Health Organization's International Health Regulations
IOAC	Independent Oversight and Advisory Committee
MSF	Médecins Sans Frontières
NAPHS	National Action Plans for Health Security
NGO	Non-governmental organisation
OIE	World Organisation for Animal Health
PHEIC	Public Health Emergency of International Concern
PPE	Personal protective equipment
SARS	Severe Acute Respiratory Syndrome
SMAC	Social Mobilisation Action Consortium
TB	Tuberculosis
UN	United Nations
UNICEF	United Nations Children's Fund
WHEP	World Health Organization's Health Emergencies Programme
WHO	World Health Organization

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